

```
18 19
ring nodes :
    1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 20 21 22 23 24 25 26 27 28
chain bonds :
    14-19 17-18
    1-2 1-6 2-3 3-4 4-5 4-7 5-6 5-9 7-8 8-9 8-10 9-13 10-11 11-12 11-14 12-13 12-17 14-15 15-16 16-17 20-21 20-25 21-22 22-23 23-24 23-26 24-25 24-28 26-27
    27-28
exact/norm bonds :
    4-7 7-8 8-9 8-10 9-13 10-11 11-12 11-14 12-13 12-17 14-15 14-19 15-16 16-17 17-18 23-26 24-28 26-27 27-28
exact bonds:
    5-9
normalized bonds:
    1-2 1-6 2-3 3-4 4-5 5-6 20-21 20-25 21-22 22-23 23-24 24-25
isolated ring systems :
    containing 1:
Match level:
    1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom
    12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:CLASS 19:CLASS 20:Atom
```

.21:Atom 22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom 29:CLASS

=> s 11

SAMPLE SEARCH INITIATED 15:57:43 FILE 'REGISTRY' SAMPLE SCREEN SEARCH COMPLETED - 16 TO ITERATE

100.0% PROCESSED 16 ITERATIONS

7 ANSWERS

SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**

BATCH **COMPLETE**

PROJECTED ITERATIONS:

80 TO 560

PROJECTED ANSWERS:

7 TO

298

7 SEA SSS SAM L1

=> d 13 1-7

L3 ANSWER 1 OF 7 REGISTRY COPYRIGHT 2003 ACS on STN

RN 574730-08-8 REGISTRY

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-[(3R)-1-(2-pyridinylmethyl)-3-pyrrolidinyl]-, (6R,12aR)- (9CI) (CA INDEX NAME)

FS STEREOSEARCH

MF C31 H29 N5 O4

SR CA

LC STN Files: CA, CAPLUS

Absolute stereochemistry.

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)

L3 ANSWER 2 OF 7 REGISTRY COPYRIGHT 2003 ACS on STN

RN 477978-88-4 REGISTRY

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-12-phenyl-, (6R,12R,12aR)-rel- (9CI) (CA INDEX NAME)

FS STEREOSEARCH

MF C28 H23 N3 O4

SR CA

LC STN Files: CA, CAPLUS

Relative stereochemistry.

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)

L3 ANSWER 3 OF 7 REGISTRY COPYRIGHT 2003 ACS on STN

RN 395665-80-2 REGISTRY

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-3-(3,3-dimethyl-2-oxobutyl)-2,3,6,7,12,12a-hexahydro-, (3S,6R,12aR)- (9CI) (CA INDEX NAME)

FS STEREOSEARCH

MF C27 H27 N3 O5

SR CA

LC STN Files: CA, CAPLUS, USPATFULL

Absolute stereochemistry.

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)

L3 ANSWER 4 OF 7 REGISTRY COPYRIGHT 2003 ACS on STN

RN 395665-78-8 REGISTRY

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-3-acetic acid, 6-(1,3-benzodioxol-5-y1)-1,2,3,4,6,7,12,12a-octahydro-1,4-dioxo-, cyclopentyl ester, (3S,6R,12aR)- (9CI) (CA INDEX NAME)

FS STEREOSEARCH

MF C28 H27 N3 O6

SR CA

LC STN Files: CA, CAPLUS, USPATFULL

Absolute stereochemistry.

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)

L3 ANSWER 5 OF 7 REGISTRY COPYRIGHT 2003 ACS on STN

RN 385770-93-4 REGISTRY

CN Methanesulfonamide, N-[3-[[(6R,12aR)-6-(1,3-benzodioxol-5-yl)-3,4,6,7,12,12a-hexahydro-1,4-dioxopyrazino[1',2':1,6]pyrido[3,4-b]indol-2(1H)-yl]methyl]phenyl]-1,1,1-trifluoro-(9CI) (CA INDEX NAME)

FS STEREOSEARCH

MF C29 H23 F3 N4 O6 S

SR CA

LC STN Files: CA, CAPLUS, USPATFULL

Absolute stereochemistry.

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)

L3 ANSWER 6 OF 7 REGISTRY COPYRIGHT 2003 ACS on STN

RN 385770-82-1 REGISTRY

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-2(1H)-acetic acid, 6-(1,3-benzodioxol-5-yl)-3,4,6,7,12,12a-hexahydro-1,4-dioxo-, (6R,12aR)-(9CI) (CA INDEX NAME)

FS STEREOSEARCH

MF C23 H19 N3 O6

SR CA

LC STN Files: CA, CAPLUS, USPATFULL

Absolute stereochemistry.

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)

L3 ANSWER 7 OF 7 REGISTRY COPYRIGHT 2003 ACS on STN

RN 385770-34-3 REGISTRY

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-2(1H)-butanamide, 6-(1,3-benzodioxol-5-yl)-N-cyclohexyl-3,4,6,7,12,12a-hexahydro-1,4-dioxo-, (6R,12aR)- (9CI) (CA INDEX NAME)

FS STEREOSEARCH

MF C31 H34 N4 O5

SR CA

LC STN Files: CA, CAPLUS, USPATFULL

Absolute stereochemistry.

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)

=> s 11 sss full FULL SEARCH INITIATED 15:58:33 FILE 'REGISTRY' FULL SCREEN SEARCH COMPLETED - 379 TO ITERATE

100.0% PROCESSED 379 ITERATIONS

207 ANSWERS

SEARCH TIME: 00.00.01

L4 207 SEA SSS FUL L1

=> file caplus
COST IN U.S. DOLLARS

SINCE FILE TOTAL

ENTRY SESSION 160.71 160.92

FULL ESTIMATED COST

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FILE COVERS 1907 - 31 Dec 2003 VOL 140 ISS 1 FILE LAST UPDATED: 30 Dec 2003 (20031230/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s 14 L5 79 L4

=> d 15 1-79 bib abs hit str
'STR' IS NOT A VALID FORMAT FOR FILE 'CAPLUS'

The following are valid formats:

ABS ----- GI and AB

ALL ----- BIB, AB, IND, RE

APPS ----- AI, PRAI

BIB ----- AN, plus Bibliographic Data and PI table (default) CAN ----- List of CA abstract numbers without answer numbers

CBIB ----- AN, plus Compressed Bibliographic Data

DALL ----- ALL, delimited (end of each field identified)

DMAX ----- MAX, delimited for post-processing

FAM ----- AN, PI and PRAI in table, plus Patent Family data

FBIB ----- AN, BIB, plus Patent FAM

IND ----- Indexing data

IPC ----- International Patent Classifications

MAX ----- ALL, plus Patent FAM, RE

```
PATS ----- PI, SO
SAM ----- CC, SX, TI, ST, IT
SCAN ----- CC, SX, TI, ST, IT (random display, no answer numbers;
             SCAN must be entered on the same line as the DISPLAY,
             e.g., D SCAN or DISPLAY SCAN)
STD ----- BIB, IPC, and NCL
IABS ----- ABS, indented with text labels
IALL ----- ALL, indented with text labels
IBIB ----- BIB, indented with text labels
IMAX ----- MAX, indented with text labels
ISTD ----- STD, indented with text labels
OBIB ----- AN, plus Bibliographic Data (original)
OIBIB ----- OBIB, indented with text labels
SBIB ----- BIB, no citations
SIBIB ----- IBIB, no citations
HIT ----- Fields containing hit terms
HITIND ----- IC, ICA, ICI, NCL, CC and index field (ST and IT)
             containing hit terms
HITRN ----- HIT RN and its text modification
HITSTR ----- HIT RN, its text modification, its CA index name, and
             its structure diagram
HITSEQ ----- HIT RN, its text modification, its CA index name, its
             structure diagram, plus NTE and SEQ fields
FHITSTR ---- First HIT RN, its text modification, its CA index name, and
             its structure diagram
FHITSEQ ---- First HIT RN, its text modification, its CA index name, its
             structure diagram, plus NTE and SEQ fields
KWIC ---- Hit term plus 20 words on either side
OCC ----- Number of occurrence of hit term and field in which it occurs
```

To display a particular field or fields, enter the display field codes. For a list of the display field codes, enter HELP DFIELDS at an arrow prompt (=>). Examples of formats include: TI; TI,AU; BIB,ST; TI,IND; TI,SO. You may specify the format fields in any order and the information will be displayed in the same order as the format specification.

All of the formats (except for SAM, SCAN, HIT, HITIND, HITRN, HITSTR, FHITSTR, HITSEQ, FHITSEQ, KWIC, and OCC) may be used with DISPLAY ACC to view a specified Accession Number. ENTER DISPLAY FORMAT (BIB):end

=> d 15 1-79 bib abs hitstr

```
ANSWER 1 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
     2003:950772 CAPLUS
ΑN
     140:747
DN
     Phosphodiesterase 5 inhibitor-ACE inhibitor combination for the treatment
TΙ
     of hypertension
     Fox, David Nathan Abraham; Hughes, Bernadette
IN
     Pfizer Limited, UK; Pfizer Inc.
PA
SO
     PCT Int. Appl., 25 pp.
     CODEN: PIXXD2
     Patent
DT
LA
     English
FAN.CNT 1
     PATENT NO.
                      KIND
                            DATE
                                           APPLICATION NO. DATE
                                           _____
PI
     WO 2003099194
                     A2
                            20031204
                                           WO 2003-IB1889
                                                            20030509
         W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM,
             PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT,
             TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD,
             RU, TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG,
             CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC,
             NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
             GW, ML, MR, NE, SN, TD, TG
PRAI GB 2002-11919
                            20020523
                      Α
     GB 2002-29784
                       Α
                            20021220
     The invention discloses combinations comprising (a) an inhibitor of cyclic
AB
     guanosine monophosphate (cGMP)-specific phosphodiesterase type 5 (PDE5)
     inhibitor and (b) an inhibitor of angiotensin converting enzyme (ACE) for
     treating hypertension.
     171596-29-5, Tadalafil
IT
     RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL
     (Biological study); USES (Uses)
        (phosphodiesterase 5 inhibitor-ACE inhibitor combination for treatment
        of hypertension)
RN
     171596-29-5 CAPLUS
     Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-
     2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)
```

L5 ANSWER 2 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN

AN 2003:914111 CAPLUS

DN 139:374117

TI Tadalafil

AU Curran, Monique P.; Keating, Gillian M.

CS Adis International Limited, Auckland, N. Z.

SO Drugs (2003), 63(20), 2203-2212 CODEN: DRUGAY; ISSN: 0012-6667

PB Adis International Ltd.

DT Journal; General Review

LA English

Tadalafil is a selective phosphodiesterase type 5 inhibitor AB that is effective in men with mild-to-severe erectile dysfunction (ED), including those with diabetes mellitus. The improvement in the erectile function domain score on the International Index of Erectile Function (IIEF) and the percentage of sexual intercourse attempts marked by successful vaginal penetration and completion was significantly greater with on-demand (not more than once daily) tadalafil 10 or 20mg than placebo in trials of 12 wk' duration. Improvement in scores on other domains of the IIEF and the percentage of pos. responses to a Global Assessment Question measuring erection improvement were also significantly greater with on-demand tadalafil than placebo. The adverse events assocd. with tadalafil were generally mild to moderate and decreased in frequency with continued administration. The most commonly reported adverse events were headache and dyspepsia. The incidence of cardiovascular adverse events was not significantly different in tadalafil or placebo recipients.

IT **171596-29-5**, Tadalafil

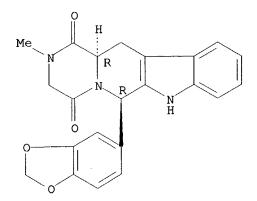
RL: ADV (Adverse effect, including toxicity); PAC (Pharmacological activity); PKT (Pharmacokinetics); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(phosphodiesterase type 5 inhibitor tadalafil in men with erectile dysfunction)

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

```
ANSWER 3 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
L5
     2003:818141 CAPLUS
ΑN
DN
     139:312448
     Methods of treating medication-, substance-, disease-, and other medical
TI
     condition-related sexual dysfunction
     Shapira, Nathan Andrew
IN
     University of Florida, USA
PA
     U.S. Pat. Appl. Publ., 12 pp.
SO
     CODEN: USXXCO
DT
     Patent
LА
     English
FAN.CNT 1
                                           APPLICATION NO. DATE
                      KIND DATE
     PATENT NO.
                            20031016
                                           US 2003-411644 20030410
     US 2003195186
                      A1
PΙ
                                           WO 2003-US10994 20030410
     WO 2003086372
                      A2
                            20031023
            AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM,
             PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT,
             TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ,
             MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG,
             CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC,
             NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
PRAI US 2002-371666P
                      Ρ
                            20020410
     Many males and females experience sexual dysfunction either caused or made
     worse by medications, other substances, diseases, and other medical
     conditions. Currently, there is need for addnl. treatment alternatives
     for these patients' sexual dysfunction. The subject invention provides a
     novel treatment for these individuals with sexual dysfunction by
     inhibiting the enzyme that breaks down acetylcholine (a compd. that helps
     modulate normal sexual function) and elevates acetylcholine levels in the
     body. The acetylcholinesterase inhibitor is selected from the group
     consisting of donepezil, galantamine, tacrine, eptastigmine,
     physostigmine, rivastigmine, metrifonate, neostigmine, huperzine A, and
     combinations thereof.
     171596-29-5, Tadalafil
TΤ
     RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL
     (Biological study); USES (Uses)
        (acetylcholinesterase inhibitor in combination with other actives for
        treatment of sexual dysfunction)
RN
     171596-29-5 CAPLUS
     Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-
CN
     2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)
```



```
ANSWER 4 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
     2003:796498 CAPLUS
AN
     139:286351
DN
     Use of methylene blue and related compounds to prevent or reverse an
TΙ
     exaggerated hemodynamic reaction
     Juneau, Martin; Tanguay, Jean-Francois; Brouillette, Denis
IN
     Institut de Cardiologie de Montreal/Montreal Heart Institute, Can.
PΑ
     PCT Int. Appl., 25 pp.
SO
     CODEN: PIXXD2
DT
     Patent
     English
LΑ
FAN.CNT 1
                                          APPLICATION NO. DATE
                      KIND DATE
     PATENT NO.
                                           _____
     ______
                                          WO 2003-CA456 20030328
                            20031009
                     A1
     WO 2003082296
         W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM,
             PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT,
             TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ,
             MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG,
             CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC,
             NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
                                           US 2003-401819
                                                            20030328
                            20031127
     US 2003219495
                       A1
                            20020328
PRAI CA 2002-2379211
                       Α
     The present invention relates to the use of the dye methylene blue (MB) or
     a related compd. to prevent or reverse an exaggerated hemodynamic reaction
     in animals in need thereof, including humans. More specifically, the
     present invention concerns the use of MB or a related compd. to prevent or
     reverse hypotension, unstable angina, myocardial infarction or shock
     caused by the concomitant ingestion of a phosphodiesterase inhibitor, such
     as sildenafil citrate, and a NO-donor, such as L-arginine, or an org.
     nitrate, such as nitroglycerin. MB reversed drops in blood pressure
     caused by the combined administration of sildenafil citrate and
     nitroglycerin in pigs and dogs.
     171596-29-5, Tadalafil
ΙT
     RL: ADV (Adverse effect, including toxicity); BSU (Biological study,
     unclassified); BIOL (Biological study)
        (phosphodiesterase inhibitor, prevention or reversal of hemodynamic
        problems caused by; methylene blue and related compds. for prevention
        or reversal of exaggerated hemodynamics)
RN
     171596-29-5 CAPLUS
     Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-
CN
     2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)
```

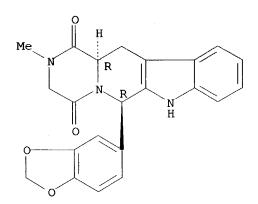
RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

- L5 ANSWER 5 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
- AN 2003:784105 CAPLUS
- TI The discovery of tadalafil: a novel and highly selective PDE5 inhibitor. 2: 2,3,6,7,12,12a-hexahydropyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione analogue
- AU Daugan, Alain; Grondin, Pascal; Ruault, Cecile; Le Monnier de Gouville, Anne-Charlotte; Coste, Herve; Linget, Jean Michel; Kirilovsky, Jorge; Hyafil, François; Labaudiniere, Richard
- CS Centre de Recherches, Laboratoire GlaxoSmithKline, Les Ulis, 91951, Fr.
- SO Journal of Medicinal Chemistry (2003), 46(21), 4533-4542 CODEN: JMCMAR; ISSN: 0022-2623
- PB American Chemical Society
- DT Journal
- LA English
- Modification of the hydantoin ring in the previously described lead compd. AΒ 2a has led to the discovery of compd. 12a, tadalafil, a highly potent and highly selective PDE5 inhibitor. The replacement of the hydantoin in compd. 2a by a piperazinedione ring led to compd. cis-11a which showed similar PDE5 inhibitory potency. Introduction of a 3,4-methylenedioxy substitution on the Ph ring in position 6 led to a potent PDE5 inhibitor cis-11c with increased cellular potency. Optimization of the chain on the piperazinedione ring led to the identification of the racemic cis-N-Me deriv. 11i. High diastereospecificity for PDE5 inhibition was obsd. in the piperazinedione series with the cis-(6R,12aR) enantiomer displaying the highest PDE5 inhibitory activity. The piperazinedione 12a, tadalafil (GF196960), has been identified as a highly potent PDE5 inhibitor (IC50 = 5 nM) with high selectivity for PDE5 vs. PDE1-4 and PDE6. Compd. 12a displays 85-fold greater selectivity vs. PDE6 than sildenafil 1. 12a showed profound and long-lasting blood pressure lowering activity (30 mmHg/>7 h) in the spontaneously hypertensive rat model after oral administration (5 mg/kg).
- IT 171596-29-5P, Tadalafil

RL: PAC (Pharmacological activity); PKT (Pharmacokinetics); PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses) (discovery of PDE5 inhibitor tadalafil and analogs)

- RN 171596-29-5 CAPLUS
- CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



IT 171488-03-2P 171488-17-8P 171596-27-3P

171596-28-4P 629652-62-6P 629652-67-1P 629652-68-2P 629652-71-7P 629652-72-8P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(discovery of PDE5 inhibitor tadalafil and analogs)

RN 171488-03-2 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 171488-17-8 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-butyl-2,3,6,7,12,12a-hexahydro-, (6R,12aR)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 171596-27-3 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aS)- (9CI) (CA INDEX NAME)

RN 171596-28-4 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6S,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

RN 629652-62-6 CAPLUS CN INDEX NAME NOT YET ASSIGNED

Relative stereochemistry.

RN 629652-67-1 CAPLUS

CN INDEX NAME NOT YET ASSIGNED

Relative stereochemistry.

RN 629652-68-2 CAPLUS CN INDEX NAME NOT YET ASSIGNED

Relative stereochemistry.

RN 629652-71-7 CAPLUS CN INDEX NAME NOT YET ASSIGNED

Relative stereochemistry.

RN 629652-72-8 CAPLUS CN INDEX NAME NOT YET ASSIGNED

Absolute stereochemistry.

.IT 171596-30-8 171596-31-9 171596-36-4

RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(discovery of PDE5 inhibitor tadalafil and analogs)

RN 171596-30-8 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-(1-methylethyl)-, (6R,12aR)- (9CI) (CA INDEX NAME)

RN 171596-31-9 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-butyl-2,3,6,7,12,12a-hexahydro-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

RN 171596-36-4 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-, (6R,12aR)- (9CI) (CA INDEX NAME)

IT 171488-16-7P

RL: SPN (Synthetic preparation); PREP (Preparation) (discovery of PDE5 inhibitor tadalafil and analogs)

RN 171488-16-7 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-butyl-2,3,6,7,12,12a-hexahydro-, (6R,12aS)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

- L5 ANSWER 6 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
- AN 2003:784091 CAPLUS
- TI The discovery of tadalafil: a novel and highly selective PDE5 inhibitor.
 1: 5,6,11,11a-tetrahydro-1H-imidazo[1',5':1,6]pyrido[3,4-b]indole-1,3(2H)-dione analogues
- AU Daugan, Alain; Grondin, Pascal; Ruault, Cecile; Le Monnier de Gouville, Anne-Charlotte; Coste, Herve; Kirilovsky, Jorge; Hyafil, Francois; Labaudiniere, Richard
- CS Centre de Recherches, Laboratoire GlaxoSmithKline, Les Ulis, 91951, Fr.
- SO Journal of Medicinal Chemistry (2003), 46(21), 4525-4532 CODEN: JMCMAR; ISSN: 0022-2623
- PB American Chemical Society
- DT Journal
- LA English
- AB Starting from Et .beta.-carboline-3-carboxylate (.beta.-CCE), 1, a modest inhibitor of type 5 phosphodiesterase (PDE5), a series of functionalized tetrahydro-.beta.-carboline derivs. has been identified as a novel chem. class of potent and selective PDE5 inhibitors. Optimization of the side chain on the hydantoin ring of initial lead compd. 2 and of the arom. ring on position 5 led to the identification of compd. 6e, a highly potent and selective PDE5 inhibitor, with greater selectivity for PDE5 vs. PDE1-4 than sildenafil. Compd. 6e demonstrated a long lasting and significant blood pressure lowering effect after iv administration in the spontaneously hypertensive rat model but showed only moderate oral in vivo efficacy.
- IT **171596-29-5**, Tadalafil

RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(synthesis and structure activity relationship of tadalafil indoledione analogs as PDE5 inhibitor)

- RN 171596-29-5 CAPLUS
- CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 7 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN

AN 2003:692406 CAPLUS

DN 139:303761

TI Structure of the catalytic domain of human phosphodiesterase 5 with bound drug molecules

AU Sung, Byung-Je; Hwang, Kwang Yeon; Jeon, Young Ho; Lee, Jae Il; Heo, Yong-Seok; Kim, Jin Hwan; Moon, Jinho; Yoon, Jung Min; Hyun, Young-Lan; Kim, Eunmi; Eum, Sung Jin; Park, Sam-Yong; Lee, Jie-Oh; Lee, Tae Gyu; Ro, Seonggu; Cho, Joong Myung

CS The Division of Drug Discovery, CrystalGenomics Inc., Jeonmin-dong, Yuseong-gu, Daejeon, 305-390, S. Korea

SO Nature (London, United Kingdom) (2003), 425(6953), 98-102 CODEN: NATUAS; ISSN: 0028-0836

PB Nature Publishing Group

DT Journal

LA English

AΒ Phosphodiesterases (PDEs) are a superfamily of enzymes that degrade the intracellular second messengers cAMP and cGMP. As essential regulators of cyclic nucleotide signaling with diverse physiol. functions, PDEs are drug targets for the treatment of various diseases, including heart failure, depression, asthma, inflammation and erectile dysfunction. Of the 12 PDE gene families, cGMP-specific PDE5 carries out the principal cGMP-hydrolyzing activity in human corpus cavernosum tissue. It is well known as the target of sildenafil citrate (Viagra) and other similar drugs for the treatment of erectile dysfunction. Despite the pressing need to develop selective PDE inhibitors as therapeutic drugs, only the cAMP-specific PDE4 structures are currently available. Here we present the three-dimensional structures of the catalytic domain (residues 537-860) of human PDE5 complexed with the three drug mols. sildenafil, tadalafil (Cialis) and vardenafil (Levitra). These structures will provide opportunities to design potent and selective PDE inhibitors with improved pharmacol. profiles.

IT 171596-29-5P, Cialis

RL: BSU (Biological study, unclassified); PRP (Properties); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation) (structure of catalytic domain of human phosphodiesterase 5 with bound drug mols.)

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 8 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN

AN 2003:652131 CAPLUS

DN 139:214237

TI Preparation of nitrate prodrugs able to release nitric oxide in a controlled and selective way and their use for prevention and treatment of inflammatory, ischemic and proliferative diseases

IN Scaramuzzino, Giovanni

PA Italy

SO Eur. Pat. Appl., 313 pp. CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

PATENT NO. KIND DATE APPLICATION NO. DATE _----_____ EP 2002-425075 PΙ Α1 20030820 20020213 AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR 20020213 PRAI EP 2002-425075 GT

New pharmaceutical compds. of general formula F-(X)q (I) [q = 1-5,AB preferably 1; F is chosen among drugs such as .delta.-tocopherol, clidanac, diethylhomospermine, glucosamine, thymocartin, vofopitant, etc.; X is chosen among 4 groups M, T, V, and Y where M = ONO2, nitrate salt, nitrite ester, ONO, thoinitrite, SNO, etc., T = OR1-M, OR1OR1-M, SR1NR2R1-M, NR2R1-M, NR2R1SR1-M, etc., R1 = satd. or unsatd., linear or branched alkylene, having 1 to 21 carbon atoms or a satd. or unsatd., optionally heterosubstituted or branched cycloalkylene, having 3 to 7 carbon atoms or an optionally heterosubstituted arylene having 3 to 7 carbon atoms; R2 = H, satd. or unsatd., linear or branched 1-21 carbon atom alkyl, satd. or unsatd. optionally heterosubstituted or branched 3-7 carbon cycloalkyl, optionally heterosubstituted 3-7 carbon aryl; R1, R2 = OH, SH, F, Cl, Br, OPO3H2, CO2H, etc.; bond between F and T = carboxylicester, carboxylic amide, glycoside, azo, thioester, sulfonic ester, etc.; V = Z-M2, OZ-M2, NR2Z-M2, R1Z-M2, OR1-M2, OR1Z-M2, M2 = M, R1-M, OR1-M, SR1-M, NR2R1-M; ZM2 = COCH2CH(M2)CH2N+Me3, COCH2CH2COM2, COCH(NHR2)CH2M2, etc.; Y = 4-COC6H4CH2ONO2, O(CH2)4ONO2, COCH(NH2)CH2ONO2, 3-OC6H4CH2ONO2, etc.] were prepd. For example, .alpha.-tocopherol reacted with 4-HO2CC6H4CH2ONO2 to give the nitroxymethyl deriv. II. The compds. of general formula I are nitrate prodrugs which can release nitric oxide in vivo in a controlled and selective way and without hypotensive side effects and for this reason they are useful for the prepn. of medicines for prevention and treatment of inflammatory, ischemic, degenerative and

proliferative diseases of musculoskeletal, tegumental, respiratory, gastrointestinal, genito-urinary and central nervous systems.

IT 586349-81-7P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(prepn. of nitrate prodrugs for treating or preventing inflammatory, ischemic, degenerative, and proliferative diseases)

RN 586349-81-7 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)-, mononitrate (9CI) (CA INDEX NAME)

CM 1

CRN 171596-29-5 CMF C22 H19 N3 O4

Absolute stereochemistry. Rotation (+).

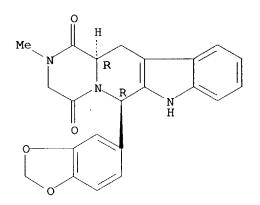
CM 2

CRN 7697-37-2 CMF H N O3



RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

```
L5
    ANSWER 9 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
ΑN
     2003:590998 CAPLUS
DN
    139:128037
    Use of acetylcholine esterase antagonists to treat insulin resistance
TΙ
    Lautt, Wayne W.
IN ·
    Diamedica Inc., Can.
PA
     PCT Int. Appl., 35 pp.
SO
    CODEN: PIXXD2
DT
     Patent
LA
     English
FAN.CNT 1
                      KIND
                           DATE
                                           APPLICATION NO.
                                                            DATE
     PATENT NO.
                                           ____
                            20030731
                                           WO 2003-CA78
                                                            20030127
PΙ
    WO 2003061648
                      A1
        W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
             PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ,
             UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD,
             RU, TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG,
             CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC,
             NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
             ML, MR, NE, SN, TD, TG
                                           US 2003-350478
                                                            20030124
     US 2003235609
                           20031225
                      A1
                            20020125
PRAI US 2002-350958P
                      P
     A method is provided for reducing insulin resistance in a mammalian.
     subject, comprising administering a suitable acetylcholine esterase
     antagonist.
IT
     171596-29-5, , Tadalafil
     RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL
     (Biological study); USES (Uses)
        (acetylcholine esterase antagonists for treatment of insulin
        resistance, and use with other agents)
RN
     171596-29-5 CAPLUS
     Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-
CN
     2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)
```



RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

```
ANSWER 10 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
L5
     2003:590992 CAPLUS
AN
DN
     139:128035
     Use of phosphodiesterase antagonists to treat insulin resistance
TΙ
     Lautt, Wayne W.; Macedo, Paula
TN
     Diamedica Inc., Can.
PA
     PCT Int. Appl., 23 pp.
SO
     CODEN: PIXXD2
DT
     Patent
     English
LΆ
FAN.CNT 1
                                           APPLICATION NO.
                                                             DATE
     PATENT NO.
                      KIND
                            DATE
     WO 2003061638
                                           WO 2003-CA77
                                                             20030127
                       A2
                            20030731
ΡI
                       A3
                            20031002
     WO 2003061638
         W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
             PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ,
             UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD,
             RU, TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG,
             CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC,
             NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
             ML, MR, NE, SN, TD, TG
                                           US 2003-350070
                                                             20030124
     US 2003181461
                       A1
                            20030925
PRAI US 2002-350954P
                       Ρ
                            20020125
     There is provided the use of a phosphodiesterase antagonist to reduce
     insulin resistance, and to amplify the effect of nitric oxide on skeletal
     muscle insulin-mediated glucose uptake in a mammal. In some instances,
     the antagonist is targeted to the liver. In some instances, the insulin
     resistance is hepatic insulin sensitizing substance ('HISS') dependant
     insulin resistance.
     171596-29-5, Tadalafil
ΙT
     RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL
     (Biological study); USES (Uses)
        (use of phosphodiesterase antagonists to treat insulin resistance)
     171596-29-5 CAPLUS
RN
     Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-
CN
     2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)
```

L5 ANSWER 11 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN

AN 2003:496779 CAPLUS

DN 139:316393

TI Novel treatment options for overlapping yet distinct erectile dysfunction and andropause syndromes

AU Tan, Robert S.

CS Geriatrics & Men's Health Programs, Department of Family & Community Medicine, University of Texas Medical School, Houston, TX, 77030, USA

Current Opinion in Investigational Drugs (Thomson Current Drugs) (2003), 4(4), 435-438 CODEN: COIDAZ; ISSN: 1472-4472

PB Thomson Current Drugs

DT Journal; General Review

LA English

AB A review. The Food & Drug Administration has recently approved, or is in the process of approving newer drugs such as the phosphodiesterase inhibitors and apomorphine to treat men's health issues including erectile dysfunction. Increasing age results in a gradual hypogonadal state in men, for which different novel delivery systems of androgens are currently offered for the symptomatic patient. As such, many men are presenting to healthcare practitioners for the first time. The age of presentation for erectile dysfunction and andropause often overlaps, typically in the fifties and beyond, therefore, it makes sense to screen for erectile dysfunction in andropause patients and vice versa. Erectile dysfunction is usually a harbinger for other illnesses, such as coronary heart disease and depression. The hypogonadal state, likewise, could be a harbinger for other ill health states in men, including obesity, depression, osteoporosis and possibly memory loss. While the newer treatments for erectile dysfunction and andropause are distinctly different and targeted at symptom relief, the presentation of the patient with erectile dysfunction or andropause offers an excellent opportunity for screening for other health states and health education strategies.

IT 171596-29-5, Cialis

RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(novel treatment options for overlapping yet distinct erectile dysfunction and andropause syndromes)

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

RE.CNT 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

10/031463

- ANSWER 12 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
- 2003:491029 CAPLUS AN
- 139:63337 DN
- Use of selective phosphodiesterase 5 (PDE5) inhibitors in the treatment of ΤI pulmonary diseases having a ventilation-perfusion mismatch
- Ghofrani, Ardeschir; Grimminger, Friedrich Josef; Schudt, Christian ΙN
- Altana Pharma AG, Germany PA
- SO PCT Int. Appl., 32 pp. CODEN: PIXXD2
- DTPatent
- English LА

FAN.CNT 1 APPLICATION NO. DATE PATENT NO. KIND DATE _____ PIWO 2003051346 A2 20030626 WO 2002-EP14279 20021214 W: AE, AL, AU, BA, BR, CA, CN, CO, CU, DZ, EC, GE, HR, HU, ID, IL, IN, IS, JP, KR, LT, LV, MA, MK, MX, NO, NZ, PH, PL, RO, SG, TN, UA, US, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR PRAI EP 2001-129951 Α 20011217 Α

EP 2002-9555 20020426 EP 2002-23936 20021025 Α

The invention discloses the use of PDE5 inhibitors for the treatment of AΒ patients having a pulmonary disorder in which in which a pulmonary ventilation-pulmonary perfusion mismatch is present.

IT 171596-29-5, Tadalafil 304683-09-8 RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(phosphodiesterase 5 inhibitors for treatment of pulmonary disease with ventilation-perfusion mismatch)

RN 171596-29-5 CAPLUS

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-CN 2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

RN304683-09-8 CAPLUS

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-CN 2,3,6,7,12,12a-hexahydro-2-methyl- (9CI) (CA INDEX NAME)

Page 37

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ANSWER 13 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
     2003:450774 CAPLUS
AN
     139:17600
DN
     Kit for reducing aching caused by phosphodiesterase V (PDE5) inhibitors
ΤI
     Abel, Samantha; Ellis, Peter
IN
PA
     Pfizer Limited, UK; Pfizer Inc.
     Eur. Pat. Appl., 18 pp.
SO
     CODEN: EPXXDW
DT
     Patent
     English
LA
FAN.CNT 1
                      KIND
                           DATE
                                           APPLICATION NO. DATE
     PATENT NO.
                            _____
                            20030611
                                          EP 2002-258123 20021126
PI
     EP 1317924
                      A1
         R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK
                                           WO 2002-IB4933
                                                           20021122
                           20030612
     WO 2003047588
                      A1
            AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
             PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,
             UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU,
             TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG,
             CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,
             PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,
             NE, SN, TD, TG
     JP 2003192614
                       A2
                            20030709
                                           JP 2002-349628
                                                            20021202
                                           US 2002-310608
                                                            20021205
     US 2003124150
                       A1
                            20030703
PRAI GB 2001-29274
                       Α
                            20011206
                       Р
                            20020208
     US 2002-355286P
     The invention relates to kits, and aspects thereof, for reducing or
AB
     eliminating the aching assocd. with the administration of multiple doses
     of a PDE5 inhibitor, the kits comprising a plurality of pharmaceutical
     compns. for sequential administration over a period of time which compns.
     comprise increasing amts. of PDE5 inhibitor starting with an amt. which
     gives a suboptimal response and ending with an amt. which gives an optimal
     response.
ΙT
     171596-29-5, Tadalafil
     RL: ADV (Adverse effect, including toxicity); PAC (Pharmacological
     activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
        (kit for reducing aching caused by phosphodiesterase V inhibitors)
RN
     171596-29-5 CAPLUS
     Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-
CN
     2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)
```

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 14 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN

AN 2003:419328 CAPLUS

DN 139:357661

TI The etiology of erectile dysfunction and mechanisms by which drugs improve erection

AU Galle, Gunter; Trummer, Harald

CS Department of Urology, Karl-Franzens University of Graz, Austria

SO Drugs of Today (2003), 39(3), 193-201 CODEN: MDACAP; ISSN: 0025-7656

PB Prous Science

DT Journal; General Review

LA English

A review. Following the National Institutes of Health (NIH) consensus AΒ conference in 1988, erectile dysfunction is defined as the consistent inability to maintain a penile erection sufficient for adequate sexual relations. The advances in basic and clin. research during the last two decades have led to the development of several new treatment options for erectile dysfunction, including new pharmacol. agents for intracavernosal, intraurethral and oral use. The recent advent of medical therapy and the poor results of long-term follow-up in reconstructive vascular surgery, have significantly modified the medical management of this disorder. Discussion of erectile dysfunction has increased, information about erectile dysfunction is increasingly available, training in erectile dysfunction was improved and last, but not least, the no. of patients seeking help for erectile dysfunction is growing, because satisfactory sexual function is an important part of a couple's healthy relationship and ongoing quality of life.

IT 171596-29-5, Tadalafil

RL: ADV (Adverse effect, including toxicity); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses) (drugs- anr other factors-induced erectile dysfunction and mechanisms by which drugs improve erection)

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

RE.CNT 78 THERE ARE 78 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

10/031463

L5 ANSWER 15 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN

AN 2003:409897 CAPLUS

DN 139:127241

TI Tadalafil, a further innovation in the treatment of sexual dysfunction

AU Pomerol, Jose Maria; Rabasseda, Xavier

CS Fundacio Puigvert, Barcelona, Spain

SO Drugs of Today (2003), 39(2), 103-113 CODEN: MDACAP; ISSN: 0025-7656

PB Prous Science

DT Journal; General Review

LA English

A review. In recognition of the large no. of sufferers of sexual AR dysfunction worldwide, and the variety of etiologies of the condition, investigation into effective pharmacol. agents has been expanded. One method of intervention is inhibition of phosphodiesterase type 5 (PDE5), an action which has already been exploited with a considerable degree -though not complete -- of success. A no. of new agents that inhibit PDE5 are under development. Notable among these is tadalafil, which has demonstrated a high level of selectivity for PDE5 over the other phosphodiesterases and has shown efficacy in improving erectile function and sexual satisfaction in phase III trials. Throughout the clin. development program for tadalafil, the drug has been well tolerated and without serious side effects. The manufacturer, Lilly ICOS, received a letter of approval from the US Food and Drug Administration on Apr. 30, 2002, for use of the drug as a treatment for erectile dysfunction. Lilly ICOS hopes to market tadalafil, with the trade name Cialis, in the USA in 2003.

IT 171596-29-5, Tadalafil

RL: ADV (Adverse effect, including toxicity); PAC (Pharmacological activity); PKT (Pharmacokinetics); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(tadalafil for treatment of sexual dysfunction)

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

RE.CNT 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

```
ANSWER 16 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
     2003:396889 CAPLUS
AN
     138:401744
DN
     Preparation of polycyclic quanine derivative phosphodiesterase V
ΤI
     Asberom, Theodros; Clader, John W.; Hu, Yueqing; Pissarnitski, Dmitri A.;
IN
     Stamford, Andrew W.; Xu, Ruo
     Schering Corporation, USA
PΑ
     PCT Int. Appl., 95 pp.
SO
     CODEN: PIXXD2
DT
     Patent
     English
LΑ
FAN.CNT 1
     PATENT NO.
                      KIND DATE
                                          APPLICATION NO. DATE
                           _____
                                           ______
     WO 2003042216
                                          WO 2002-US35721 20021107
PΤ
                      A1
                            20030522
         W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
            CO, CR, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, HR, HU,
            ID, IL, IN, IS, JP, KG, KR, KZ, LC, LK, LR, LT, LU, LV, MA, MD,
            MG, MK, MN, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SC, SE, SG, SI,
            SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UZ, VC, VN, YU, ZA, ZM, AM,
            AZ, BY, KG, KZ, MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG,
            CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,
             PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,
            NE, SN, TD, TG
                                          US 2002-290011
     US 2003176413
                      A1
                            20030918
                                                            20021107
                            20011109
PRAI US 2001-344498P
                       Ρ
     MARPAT 138:401744
OS
GI
* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *
     Title compds. I [q = 0-2; R1, R3-6 = H, alkyl, aryl, heteroaryl,
     cycloalkyl, heterocycloalkyl; R2 = H, halo, alkyl, alkoxy, etc.; Y =
     alkyl, aryl] are prepd. For instance, 4-amino-1-benzyl-5-
     (ethoxycarbonyl)imidazole (prepn. given) is treated with ethylisocyanate
     (o-xylene, reflux, 16 h), the resulting product cyclized (MeOH, NaOMe,
     reflux, 4 h), subsequently treated with POCl3 and the product used to
     alkylate (R)-2-amino-3-phenylpropanol (NMP, 130.degree., 12 h) which
     provides II. II is treated with MsCl (Et3N), debenzylated (MeOH, NH4O2CH,
     Pd(OH)2/C, reflux, 3 h), brominated (HOAc, NaOAc, Br2), alkylated with
     3-chloro-4-methoxybenzyl bromide (DMF, K2CO3) and treated with NaOEt
     (DMF/EtOH) to afford III. III has IC50 < 4.1 nM for PDE V and IC50 > 300
     nM for PDE VI. I are useful for treating sexual dysfunction.
ΙT
     171596-29-5, IC-351
     RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
        (combination pharmaceutical; prepn. of polycyclic guanine deriv.
        phosphodiesterase V inhibitors)
RN
     171596-29-5 CAPLUS
```

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-

2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

CN

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

```
L5
    ANSWER 17 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
    2003:319257 CAPLUS
ΑN
    138:343856
DN
    Buccal sprays or capsules containing cardiovascular or renal drugs
TI
    Dugger, Harry A.
IN
PA
    U.S. Pat. Appl. Publ., 15 pp., Cont.-in-part of U.S. Ser. No. 537,118.
SO
    CODEN: USXXCO
    Patent
DΤ
LΑ
    English
FAN.CNT 10
                    KIND DATE
                                          APPLICATION NO. DATE
    PATENT NO.
                                          _____
                     ____
                           20030424
                                          US 2002-230075 20020829
PΙ
    US 2003077229
                     A1
    WO 9916417
                     A1
                           19990408
                                          WO 1997-US17899 19971001
        W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE,
            DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ,
            LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL,
            PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US,
            UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
         RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR,
            GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA,
            GN, ML, MR, NE, SN, TD, TG
                                          EP 2000-109347 19971001
                           20000823
    EP 1029536
                      A1
         R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
            IE, SI, LT, LV, FI, RO
                           20000920
                                         EP 2000-109357 19971001
    EP 1036561
                      A1
         R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO
PRAI WO 1997-US17899 A2
                           19971001
    US 2000-537118
                      A2
                           20000329
     EP 1997-911621
                      A3
                           19971001
     Buccal aerosol sprays or capsules using polar and non-polar solvent have
AΒ
     now been developed which provide biol. active compds. for rapid absorption
    through the oral mucosa, resulting in fast onset of effect. The buccal
    polar compns. of the invention comprise formulation A: aq. polar solvent,
     active compd., and optional flavoring agent; formulation B: aq. polar
     solvent, active compd., optionally flavoring agent, and propellant;
     formulation C: non-polar solvent, active compd., and optional flavoring
     agent; and formulation D: non-polar solvent, active compd., optional
     flavoring agent, and propellant. Thus, a polar lingual spray contained
     isoproterenol-HCl 0.5-6, water 50-75, EtOH 5-10, PEG 5-15, sorbitol
     0.4-1.0, aspartame 0.04-0.1, and flavors 2-3%.
     171596-29-5, Tadalafil
IT
     RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
        (buccal sprays or capsules contg. cardiovascular or renal drugs)
     171596-29-5 CAPLUS
RN
     Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-1
CN
     2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)
```

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ANSWER 18 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
L5
     2003:296061 CAPLUS
AN
     138:297701
DΝ
     Transmucosal administration of phosphodiesterase inhibitors for the
TΤ
     treatment of erectile dysfunction
     Doherty, Paul C., Jr.; Place, Virgil A.; Smith, William L.
IN
     Vivus, Inc., USA
PA
     U.S., 13 pp., Cont.-in-part of U.S. 6,037,346.
SO
     CODEN: USXXAM
DT
     Patent
     English
LA
FAN.CNT 7
                     KIND DATE
                                          APPLICATION NO. DATE
     PATENT NO.
                                           _____
     US 6548490
                     B1 20030415
                                          US 1999-467094 19991210
PΙ
     US 6037346
                      Α
                            20000314
                                          US 1998-181070
                                                            19981027
     WO 2001041807
                      A2
                            20010614
                                          WO 2000-US33372 20001208
     WO 2001041807
                     A3
                          20020214
             AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,
             HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,
             LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,
             SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU,
             ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
             DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
             BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
                                          EP 2000-986297 20001208
                            20020911
     EP 1237577
                      A2
             AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, MC, PT, IE,
             SI, LT, LV, FI, RO, MK, CY, AL
                                           JP 2001-543151
                                                            20001208
     JP 2003516363
                      Т2
                            20030513
                                           US 2001-888250
                                                            20010621
                            20020328
     US 2002037828
                      A1
                            20020611
     US 6403597
                      В2
                            20020110
                                           US 2001-938417
                                                            20010823
     US 2002004498
                      A1
     US 2003134861
                      A1
                            20030717
                                           US 2003-351198
                                                            20030124
PRAI US 1997-958816
                      B2
                            19971028
                            19981027
     US 1998-181070
                      A2
                            19991210
     US 1999-467094
                      Α
     WO 2000-US33372
                      W
                            20001208
     A method is provided for treating erectile dysfunction in a mammalian male
AB
     individual. The method involves the transmucosal administration of a
     phosphodiesterase inhibitor or a pharmaceutically acceptable salt, ester,
     amide or deriv. thereof, within the context of an effective dosing
     regimen. Preferred modes of administration include transbuccal,
     sublingual and transrectal routes. Pharmaceutical formulations and kits
     are provided as well.
     171596-29-5, Tadalafil
IT
     RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL
     (Biological study); USES (Uses)
        (transmucosal administration of phosphodiesterase inhibitors for the
        treatment of erectile dysfunction)
     171596-29-5 CAPLUS
RN
     Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-
CN
     2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)
```

RE.CNT 71 THERE ARE 71 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

10/031463

- L5 ANSWER 19 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
- AN 2003:262948 CAPLUS
- DN 139:159439
- TI Design, synthesis and biological activity of .beta.-carboline-based type-5 phosphodiesterase inhibitors
- AU Maw, Graham N.; Allerton, Charlotte M. N.; Gbekor, Eugene; Million, William A.
- CS Pfizer Global Research and Development, Department of Discovery Chemistry, Sandwich Laboratories (IPC351), Sandwich, Kent, CT13 9NJ, UK
- SO Bioorganic & Medicinal Chemistry Letters (2003), 13(8), 1425-1428 CODEN: BMCLE8; ISSN: 0960-894X
- PB Elsevier Science B.V.
- DT Journal
- LA English
- OS CASREACT 139:159439
- The SAR of a series of .beta.-carboline derived type 5 phosphodiesterase inhibitors has been explored and we have discovered compds. with excellent levels of PDE5 potency and selectivity over PDE6. However, the series exhibits low levels of selectivity over PDE11, a phosphodiesterase with unknown function.
- IT 574730-01-1

RL: PAC (Pharmacological activity); RCT (Reactant); THU (Therapeutic use); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses) (design, synthesis and structure-activity relationship of .beta.-carboline-based type-5 phosphodiesterase inhibitors)

RN 574730-01-1 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-[(3R)-1-(phenylmethyl)-3-pyrrolidinyl]-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

IT 385770-04-7P 574729-97-8P 574729-98-9P 574729-99-0P 574730-00-0P 574730-03-3P 574730-04-4P 574730-05-5P 574730-06-6P 574730-10-2P 574730-11-3P 574730-12-4P 574730-13-5P 574730-14-6P 574730-15-7P 574730-16-8P 574730-17-9P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(design, synthesis and structure-activity relationship of

.beta.-carboline-based type-5 phosphodiesterase inhibitors)

RN 385770-04-7 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-[2-(4-morpholinyl)ethyl]-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 574729-97-8 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-[2-(dimethylamino)ethyl]-2,3,6,7,12,12a-hexahydro-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 574729-98-9 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-[1-(phenylmethyl)-4-piperidinyl]-, (6R,12aR)-(9CI) (CA INDEX NAME)

RN 574729-99-0 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-[1-(phenylmethyl)-3-azetidinyl]-, (6R,12aR)-(9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 574730-00-0 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-[(3S)-1-(phenylmethyl)-3-pyrrolidinyl]-, (6R,12aR)- (9CI) (CA INDEX NAME)

RN 574730-03-3 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-[(3R)-1-ethyl-3-pyrrolidinyl]-2,3,6,7,12,12a-hexahydro-, (6R,12aR)-(9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 574730-04-4 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-[(3R)-1-butyl-3-pyrrolidinyl]-2,3,6,7,12,12a-hexahydro-, (6R,12aR)-(9CI) (CA INDEX NAME)

RN 574730-05-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-[(3R)-1-(cyclopropylmethyl)-3-pyrrolidinyl]-2,3,6,7,12,12a-hexahydro-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 574730-06-6 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-[(3R)-1-(2-propenyl)-3-pyrrolidinyl]-, (6R,12aR)- (9CI) (CA INDEX NAME)

RN 574730-07-7 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-[(3R)-1-(2-methoxyethyl)-3-pyrrolidinyl]-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 574730-08-8 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-[(3R)-1-(2-pyridinylmethyl)-3-pyrrolidinyl]-, (6R,12aR)- (9CI) (CA INDEX NAME)

RN 574730-09-9 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-[(3R)-1-(3-pyridinylmethyl)-3-pyrrolidinyl]-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 574730-10-2 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-[(3R)-1-(pyrazinylmethyl)-3-pyrrolidinyl]-, (6R,12aR)- (9CI) (CA INDEX NAME)

RN 574730-11-3 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-[(3R)-1-[(1-methyl-1H-imidazol-2-yl)methyl]-3-pyrrolidinyl]-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 574730-12-4 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-[(3R)-1-(1H-imidazol-2-ylmethyl)-3-pyrrolidinyl]-, (6R,12aR)- (9CI) (CA INDEX NAME)

RN 574730-13-5 CAPLUS

CN Pyrrolidine, 3-[(6R,12aR)-6-(1,3-benzodioxol-5-yl)-3,4,6,7,12,12a-hexahydro-1,4-dioxopyrazino[1',2':1,6]pyrido[3,4-b]indol-2(1H)-yl]-1-[(dimethylamino)acetyl]-, (3R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 574730-14-6 CAPLUS

CN 1-Pyrrolidineacetamide, 3-[(6R,12aR)-6-(1,3-benzodioxol-5-yl)-3,4,6,7,12,12a-hexahydro-1,4-dioxopyrazino[1',2':1,6]pyrido[3,4-b]indol-2(1H)-yl]-N,N-dimethyl-, (3R)- (9CI) (CA INDEX NAME)

RN 574730-15-7 CAPLUS

CN 1-Pyrrolidineacetamide, 3-[(6R,12aR)-6-(1,3-benzodioxol-5-yl)-3,4,6,7,12,12a-hexahydro-1,4-dioxopyrazino[1',2':1,6]pyrido[3,4-b]indol-2(1H)-yl]-, (3R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

$$H_2N$$
 N
 R
 N
 R

RN 574730-16-8 CAPLUS

CN Azetidine, 1-[[(3R)-3-[(6R,12aR)-6-(1,3-benzodioxol-5-yl)-3,4,6,7,12,12a-hexahydro-1,4-dioxopyrazino[1',2':1,6]pyrido[3,4-b]indol-2(1H)-yl]-1-pyrrolidinyl]acetyl]- (9CI) (CA INDEX NAME)

RN 574730-17-9 CAPLUS

CN 1-Pyrrolidineacetamide, 3-[(6R,12aR)-6-(1,3-benzodioxol-5-yl)-3,4,6,7,12,12a-hexahydro-1,4-dioxopyrazino[1',2':1,6]pyrido[3,4-b]indol-2(1H)-yl]-N-ethyl-, (3R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

IT 171596-29-5

RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses) (design, synthesis and structure-activity relationship of

.beta.-carboline-based type-5 phosphodiesterase inhibitors)

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

IT 574730-02-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(design, synthesis and structure-activity relationship of .beta.-carboline-based type-5 phosphodiesterase inhibitors)

RN 574730-02-2 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-(3R)-3-pyrrolidinyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

IT 574730-02-2DP, derivs.

RL: SPN (Synthetic preparation); PREP (Preparation) (design, synthesis and structure-activity relationship of .beta.-carboline-based type-5 phosphodiesterase inhibitors)

RN 574730-02-2 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-(3R)-3-pyrrolidinyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

10/031463

L5 ANSWER 20 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN

AN 2003:245950 CAPLUS

DN 138:395247

TI Tadalafil Lilly ICOS

AU Rotella, David P.

CS Hopewell Discovery Chemistry, Bristol-Myers Squibb Company, Princeton, NJ, 08543-5400, USA

Current Opinion in Investigational Drugs (Thomson Current Drugs) (2003), 4(1), 60-65 CODEN: COIDAZ; ISSN: 1472-4472

PB Thomson Current Drugs

DT Journal; General Review

LA English

AB A review. Tadalafil is a phosphodiesterase type 5 inhibitor in development by Lilly ICOS for the potential treatment of erectile dysfunction. The compd. will be marketed in North America and Europe by a collaboration formed by Eli Lilly & Co and ICOS Corp. Eli Lilly & Co has marketing rights in all other territories. Marketing approval in Europe was granted in Nov. 2002, with launch expected in the first half of 2003. An approvable letter was issued by the FDA in Apr. 2002, with a US launch anticipated in the first half of 2003.

IT 171596-29-5, Cialis
 RL: ADV (Adverse effect, including toxicity); PAC (Pharmacological
 activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (tadalafil (Cialis) for the potential treatment of erectile
 dysfunction)

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

RE.CNT 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 21 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN

AN 2003:228126 CAPLUS

DN 138:379173

TI Erectile dysfunction in patients with diabetes mellitus - advances in treatment with phosphodiesterase type 5 inhibitors

AU Snow, Kenneth J.

CS Joslin Diabetes Cent., Boston, MA, 02215, USA

SO British Journal of Diabetes & Vascular Disease (2002), 2(4), 282-287 CODEN: BJDVAI; ISSN: 1474-6514

PB MediNews (Diabetes) Ltd.

DT Journal

LA English

AB In 4 independent, 12-wk, randomized, placebo-controlled clin. trials that evaluated the proerectile properties of the selective phosphodiesterase type 5 (PDE-5) inhibitors sildenafil (Viagra) (25-100 mg), tadalafil (10 and 20 mg) and vardenafil (10 and 20 mg) in men with erectile dysfunction (ED) secondary to diabetes mellitus, all the drugs were superior to placebo. In this difficult-to-treat population, the greatest difference from placebo for the overall responder rate of diabetic men reporting improved erections occurred with 20 mg vardenafil (72% vs. 13% for placebo). All the PDE-5 inhibitors were generally well tolerated. There were fewer reports of visual disturbance with vardenafil or tadalafil than with sildenafil, which may be due to their greater selectivity for PDE-5 inhibition and less cross-reactivity with retinal PDE-6 inhibition. The studies suggest there may be significant differences between the three drugs.

IT 171596-29-5, Tadalafil

RL: ADV (Adverse effect, including toxicity); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses) (erectile dysfunction in patients with diabetes mellitus treatment by the phosphodiesterase-5 inhibitors sildenafil, tadalafil, and vardenafil)

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

RE.CNT 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

```
ANSWER 22 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
L5
     2003:221501 CAPLUS
ΑN
     138:243313
DN
     Pharmaceutical composition comprising gamma-butyrobetaine for stimulating
ΤI
     the sexual activity and potency
     Kalvinsh, Ivars; Veveris, Maris; Birmans, Anatolijs
IN
PA
     Latvia
     PCT Int. Appl., 13 pp.
SO
     CODEN: PIXXD2
     Patent
DT
     English
LΑ
FAN.CNT 1
     PATENT NO.
                      KIND DATE
                                           APPLICATION NO. DATE
                     A1 20030320
                                           WO 2002-LV5 20020304
     WO 2003022263
PΙ
         W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
             PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,
             UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU,
             TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,
             CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,
             BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
PRAI LV 2001-133
                       Α
                             20010907
     New medical use for gamma-butyrobetaine is disclosed. Also disclosed are
     pharmaceutical compns., contg. gamma-butyrobetaine or combination thereof
     with L-carnitine or sildenafil for oral, parenteral, s.c., transdermal,
     topical, sublingual, intrauetral, intranasal or rectal application, useful
     for stimulation of sexual activity and potency in mammals. The disclosed
     compns., when applied orally for 6 wk to non-narcotized male rats
     substantially increase their sexual activity, decreasing the arousal time,
     increasing the no. of copulations and resultativeness of mounting
     attempts. When applied by intracavernous or i.v. route said
     pharmaceutical compns. increase intracorporeal pressure and duration of
     erection, as well as restore stimulation-induced reflectory erections in
     anesthetized animals.
     171596-29-5, Tadalafil
IT
     RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL
     (Biological study); USES (Uses)
        (Pharmaceutical compn. comprising gamma-butyrobetaine for stimulating
        the sexual activity and potency)
RN
     171596-29-5 CAPLUS
     Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-
CN
     2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)
```

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

```
ANSWER 23 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
L5
    2003:221500 CAPLUS
AN
DN
     138:231752
     Sexual activity stimulating composition comprising .gamma.-butyrobetaine
TI
    Kalvinsh, Ivars; Veveris, Maris; Birmans, Anatolijs
IN
PA
     PCT Int. Appl., 12 pp.
SO
    CODEN: PIXXD2
DT
     Patent
LΑ
     English
FAN.CNT 1
                                          APPLICATION NO. DATE
     PATENT NO.
                     KIND DATE
                           _____
                                          _____
    WO 2003022262
                      A1
                           20030320
                                         WO 2002-LV4
                                                        20020304
PΙ
        W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
             PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,
             UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU,
             TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,
             CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,
             BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
                            20010907
PRAI LV 2001-134
                      Α
     Disclosed are pharmaceutical compns., contg. .gamma.-butyrobetaine or
     combination with 3-(2,2,2-trimethylhydrazinium)propionate or sildenafil
     for oral, parenteral, s.c., transdermal, topical, sublingual,
     intrauretral, intranasal or rectal application, useful for stimulation of
     sexual activity and potency in mammals. The disclosed compns., when
     applied orally for 6 wk to non-narcotized male rats substantially increase
     their sexual activity, decreasing the arousal time, increasing the no. of
     copulations and mounting attempts. When applied by intracavernous or i.v.
     route said pharmaceutical compns. increase intracorporeal pressure and
     duration of erection, as well as restore stimulation-induced reflectory
     erection in narcotized animals.
     171596-29-5, Tadalafil
IT
     RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
        (sexual activity stimulating compn. comprising .gamma.-butyrobetaine)
RN
     171596-29-5 CAPLUS
     Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-
CN
     2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)
```

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 24 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN

AN 2003:108230 CAPLUS

DN 138:198494

TI Tadalafil phase 3 experience

AU Stuckey, Bronwyn G. A.

CS Department of Endocrinology and Diabetes, Keogh Institute for Medical Research, Sir Charles Gairdner Hospital, Nedlands, 6009, Australia

SO European Urology, Supplements (2002), 1(8), 25-30 CODEN: EUSUAU; ISSN: 1569-9056

PB Elsevier Science B.V.

DT Journal

LA English

Objectives: To evaluate the efficacy and safety of tadalafil, a potent, AΒ oral phosphodiesterase type 5 inhibitor for erectile dysfunction. Methods: Integrated analyses of five 12-wk, randomized, double-blind, placebo-controlled phase 3 clin. trials involving 1112 men with mild-to-severe erectile dysfunction of various etiologies taking as-needed tadalafil 2.5, 5, 10 or 20 mg (n = 804) or placebo (n = 308) were conducted. Results: Tadalafil therapy significantly enhanced erectile function (vs. placebo), eliciting robust changes that were consistent across a no. of efficacy outcome measures. Ratings of erectile function, the likelihood of successfully completing intercourse, and proportions of men reporting enhanced erectile function were significantly higher in tadalafil patients compared with placebo controls. Eighty-one percent of all men who were treated with tadalafil 20 mg reported improved erections at study endpoint compared with 35% of placebo controls. Tadalafil was well tolerated, with headache and dyspepsia being the most frequent treatment-emergent adverse events. These events tended to be mild or moderate and to abate with continued dosing. Conclusions: Tadalafil therapy significantly ameliorated erectile function and was well tolerated by a broad spectrum of men with erectile insufficiency.

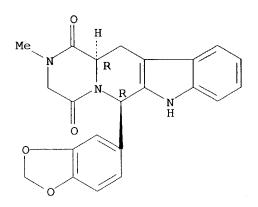
IT 171596-29-5, Tadalafil

RL: ADV (Adverse effect, including toxicity); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses) (tadalafil for erectile dysfunction patients)

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 25 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN

AN 2003:108228 CAPLUS

DN 138:198051

TI Restoring a normal sexual response: the ultimate goal of erectile dysfunction therapy

AU Porst, Hartmut

CS Private Urological Practice, Hamburg, D-20345, Germany

SO European Urology, Supplements (2002), 1(8), 19-24 CODEN: EUSUAU; ISSN: 1569-9056

PB Elsevier Science B.V.

DT Journal; General Review

LA English

A review. Erectile dysfunction may compromise quality of life for more AB than 30 million European men (and their partners). Although more likely with advancing age, erectile insufficiency can be effectively and safely treated and is no longer considered an inevitable consequence of aging. One potential treatment, the investigational agent tadalafil, is a potent, selective, reversible inhibitor of phosphodiesterase type 5 with a favorable pharmacokinetic profile that may translate into practical advantages. These advantages include a broad window of therapeutic responsiveness, which may relieve some men of the pressure to perform within a specific time frame and reduce the amt. of planning of sexual activity. Plasma tadalafil concns. are not affected by age, comorbidities (e.g. diabetes), food or alc. This profile should render treatment regimens convenient and uncomplicated, with consistent, "real-world" efficacy in a broad patient spectrum. In randomized, double-blind, placebo-controlled studies tadalafil, taken as needed before sexual activity without restrictions on food/alc. intake, significantly enhanced erectile function (vs. placebo), leading to successful intercourse in over 70% of attempts at more than 30 min to 24 h after dosing and approx. 60% at 36 h. Tadalafil was well tolerated; headache and dyspepsia were the most common treatment-emergent adverse effects.

IT **171596-29-5**, Tadalafil

RL: ADV (Adverse effect, including toxicity); DMA (Drug mechanism of action); PAC (Pharmacological activity); PKT (Pharmacokinetics); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(restoring normal sexual response as ultimate goal of therapy for erectile dysfunction patients)

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

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ANSWER 26 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
     2003:42146 CAPLUS
AN
    138:83422
DN
    Use of 2.5-dihydroxybenzenesulfonic acid derivatives in the production of
TI
     a medicament used to potentiate the effect of other drugs in the treatment
    of erectile dysfunction
    Esteve-Soler, Jose; Tejada-Gorman, Inigo De Saenz
IN
     Laboratorios del Esteve, S.A., Spain
     PCT Int. Appl., 18 pp.
    CODEN: PIXXD2
DT
     Patent
     Spanish
LΑ
FAN.CNT 1
                     KIND DATE
                                          APPLICATION NO. DATE
     PATENT NO.
                     ____
                                          ______
PΙ
    WO 2003004097
                    A1 20030116
                                         WO 2002-ES325
                                                          20020701
        W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
            CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
            GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
            LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
            PL, PT, RO
        RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG,
             CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,
             PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,
            NE, SN, TD, TG
                           20030201
                                          ES 2001-1535
                                                           20010702
     ES 2180446
                      Α1
                           20010702
PRAI ES 2001-1535
                      Α
    The invention relates to the use of 2,5-dihydroxybenzenesulfonic acid
     derivs. in the prodn. of medicaments that are used in therapeutics in
     order to potentiate the effects of inhibitors of phosphodiesterase-5
     including sildenafil, vardenafil and IC-351, apomorphine, nitric oxide
     including amyl nitrate, nitroglycerin, nitroprusside, nitrosothiol and
     nicorandil, compds. that increase the cyclic GMP level in the penile
     tissue and other compds. that are intended to stimulate penile erection in
IT
     171596-29-5, Ic-351
     RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
        (use of 2,5-dihydroxybenzenesulfonic acid derivs. to potentiate the
        effect of other drugs in the treatment of erectile dysfunction)
     171596-29-5 CAPLUS
RN
     Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-
CN
     2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)
```

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

- L5 ANSWER 27 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
- AN 2003:9502 CAPLUS
- DN 138:49292
- TI Erectile dysfunction: comparison of efficacy and side effects of the PDE-5 inhibitors sildenafil, vardenafil and tadalafil review of the literature
- AU Gresser, U.; Gleiter, C. H.
- CS Internal Medicine, Praxisklinik Sauerlach, Germany
- SO European Journal of Medical Research (2002), 7(10), 435-446 CODEN: EJMRFL; ISSN: 0949-2321
- PB I. Holzapfel Publishers
- DT Journal; General Review
- LA English
- AΒ A review. Since introduction of the PDE-5 inhibitor sildenafil 4 yr ago, there has been a fundamental change in the treatment of erectile dysfunction (ED). Intracavernosal or intraurethral injections of vasoactive substances or penile implants as mech. aids now play hardly any part in it. The development of the PDE-5 inhibitors vardenafil and tadalafil prompts the question of whether and how these three substances differ in terms of their efficacy and adverse effects. Sildenafil has proven to be a very effective medicinal product. Studies with a follow-up period of up to 6 yr have been conducted. The success rate of sildenafil varies in the group of ED patients with an org. underlying disease from 43% in patients who have undergone radical prostatectomy to 85% in patients with a neurol. underlying disease, and amts. to an av. 82% (range 43-85%, 100mg). In an evaluation of spontaneous reports of deaths assocd. with sildenafil, the FDA concluded that there was no deducible evidence of an increase in the mortality rate among sildenafil users compared to the general population. In fact, fewer deaths assocd. in time with the ingestion of sildenafil were reported than might have been expected purely statistically on the basis of the normal mortality rate for men in this age group. According to the initial studies conducted, vardenafil and tadalafil demonstrate efficacy data approx., comparable to those of sildenafil. As yet, insufficient data are available to evaluate the adverse effects of vardenafil and tadalafil, particularly their long-term use and use in high-risk groups. Sildenafil has already been used by over 20 million men in over 110 countries and is one of the best-studied pharmacol. substances available. This advantage in terms of knowledge and safety data makes sildenafil a safe and reliable treatment for patients with erectile dysfunction.

IT 171596-29-5, Tadalafil

RL: ADV (Adverse effect, including toxicity); DMA (Drug mechanism of action); PAC (Pharmacological activity); PKT (Pharmacokinetics); THU (Therapeutic use); BIOL (Biological study); USES (Uses) (comparison of efficacy and side effects of PDE-5 inhibitors sildenafil, vardenafil and tadalafil for patients with erectile dysfunction)

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

RE.CNT 92 THERE ARE 92 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

10/031463

L5 ANSWER 28 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN

AN 2002:968677 CAPLUS

DN 138:32694

TI Overview of the cardiovascular effects of tadalafil

AU Emmick, J. T.; Stuewe, S. R.; Mitchell, M.

CS Eli Lilly and Company, Indianapolis, IN, USA

SO European Heart Journal Supplements (2002), 4(Suppl. H), H32-H47 CODEN: EHJSFT; ISSN: 1520-765X

PB W. B. Saunders

DT Journal; General Review

LA English

A review. Because erectile dysfunction (ED) and cardiovascular disease AB share a no. of risk factors, it is important to understand the hemodynamic and cardiovascular effects of treatments for ED, including the phosphodiesterase (PDE) type 5 inhibitors. In healthy subjects, administration of tadalafil (a potent and selective inhibitor of PDE5 indicated for the treatment of ED) resulted in small decreases in standing blood pressure. In the general population of men with ED, the effects of tadalafil on hemodynamic parameters were similar to those obsd. with placebo. As with sildenafil, administration of tadalafil with any nitrate is contraindicated. Tadalafil administration was not assocd. with prolongation in QT interval. Safety data show that the incidence rate of myocardial infarction following treatment with tadalafil was comparable to that obsd. in the age-standardized male population, and incidence rates of cardiovascular events obsd. in patients who were and were not treated with concomitant antihypertensive therapy were comparable. These results demonstrate that tadalafil has no clin. relevant effects on hemodynamics, although it should not be used in combination with nitrates. In addn., integrated analyses of the cardiovascular adverse events in the phase III safety database as a whole, and in patients taking concomitant antihypertensive medication, demonstrate that tadalafil is not assocd. with increased risk for clin. significant cardiovascular events.

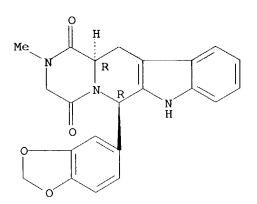
IT 171596-29-5, Tadalafil

RL: ADV (Adverse effect, including toxicity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(cardiovascular effects of tadalafil)

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)



RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 29 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN

AN 2002:968676 CAPLUS

DN 138:32693

TI Tadalafil: a novel treatment for erectile dysfunction

AU Giuliano, F.; Varanese, L.

CS Department of Urology, AP-HP, Centre Hospitalier Universitaire de Bicetre, Le Kremlin-Bicetre, Fr.

SO European Heart Journal Supplements (2002), 4(Suppl. H), H24-H31 CODEN: EHJSFT; ISSN: 1520-765X

PB W. B. Saunders

DT Journal; General Review

LA English

A review. Tadalafil, a potent, selective and reversible inhibitor of AΒ phosphodiesterase type 5 that is under review as an oral therapy for erectile dysfunction, has a time to max. concn. of 2 h and a half-life of 17.5 h. Systemic tadalafil exposure was not clin. significantly altered by age or diabetes. Food did not alter the rate and extent of absorption of tadalafil, and no restrictions regarding food or alc. intake were imposed on patients in tadalafil clin. trials. Furthermore, the time of dosing had no significant effect on the systemic distribution of tadalafil. Integrated analyses of data from five phase III trials demonstrated that tadalafil at doses from 5 mg to 20 mg significantly improved erectile function (vs placebo) by all efficacy measures. Tadalafil was safe and well tolerated in the phase III studies, with headache and dyspepsia being the most frequent adverse events. Addnl., in a sep. study of patients with erectile dysfunction and diabetes, tadalafil 10 mg and 20 mg significantly improved all efficacy measures as compared with placebo.

IT **171596-29-5**, Tadalafil

RL: ADV (Adverse effect, including toxicity); PAC (Pharmacological activity); PKT (Pharmacokinetics); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(tadalafil as novel treatment for erectile dysfunction)

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

RE.CNT 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 30 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN

AN 2002:968674 CAPLUS

DN 138:32691

TI Phosphodiesterase type 5 inhibition in erectile dysfunction: an overview

AU Giuliano, F.

CS Department of Urology, Centre Hospitalier Universitaire de Bicetre, Le Kremlin-Bicetre, Fr.

SO European Heart Journal Supplements (2002), 4(Suppl. H), H7-H12 CODEN: EHJSFT; ISSN: 1520-765X

PB W. B. Saunders

DT Journal; General Review

LA English

A review. Widely distributed throughout the body, cyclic nucleotide AΒ phosphodiesterases (PDEs) are functionally heterogeneous enzymes with potential roles in a no. of physiol. actions. Among these enzymes, PDE type 5 has received particular attention because of the widespread use of the PDE5 inhibitor sildenafil citrate as an oral therapy for erectile dysfunction. Within the corpus cavemosum of the penis, PDE5 catalyzes the enzymic degrdn. (inactivation) of cyclic 3',5'-guanosine monophosphate, which is a second messenger and key mediator of vascular and trabecular erectile tissue smooth muscle relaxation. By amplifying the nitric oxide-cyclic nucleotide signalling pathway, PDE5 inhibitors serve as 'contingent agonists' of the physiol. response to sexual arousal. In exptl. models, tadalafil increased the sensitivity of penile resistance arteries and erectile tissues to three stimuli of smooth muscle relaxation, namely elec. field stimulation, sodium nitroprusside, and acetylcholine. In randomized, double-blind, placebo-controlled trials, sildenafil and the investigational agents tadalafil and vardenafil significantly enhanced erectile function in the majority of patients and were well tolerated.

IT **171596-29-5**, Tadalafil

RL: DMA (Drug mechanism of action); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(phosphodiesterase type 5 inhibition in erectile dysfunction)

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 31 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN

AN 2002:966707 CAPLUS

DN 138:19445

TI Effects of tadalafil on erectile dysfunction in men with diabetes

AU De Tejada, Inigo Saenz; Anglin, Greg; Knight, James R.; Emmick, Jeffrey T.

CS Fundacion para la Investigacion y el Desarrollo en Andrologia, Madrid, Spain

SO Diabetes Care (2002), 25(12), 2159-2164 CODEN: DICAD2; ISSN: 0149-5992

PB American Diabetes Association, Inc.

DT Journal

LA English

The aim of this study was to evaluate the efficacy and safety of tadalafil AΒ taken as needed before sexual activity by men with diabetes and erectile dysfunction (ED). Men with type 1 or type 2 diabetes and a min. 3-mo history of ED were randomly allocated to one of three groups: placebo (n =71), tadalafil 10 mg (n = 73), or tadalafil 20 mg (n = 72) taken up to once daily for 12 wk. Changes from baseline in mean scores on the erectile function domain of the International Index of Erectile Function (IIEF) and changes from baseline in the proportion of "yes" responses to question 2, "Were you able to penetrate," and 3, "Were you able to complete intercourse," of the Sexual Encounter Profile were coprimary outcome measures. A total of 191 (88%) of 216 patients completed the study. Treatment with tadalafil significantly improved all primary efficacy variables, regardless of baseline HbAlc level. Therapy with tadalafil also significantly improved a no. of secondary outcome measures, including changes in other IIEF domains, individual IIEF questions, and percentage of pos. responses to a global assessment question measuring erection improvement. Treatment with tadalafil did not alter mean HbAlc levels. Tadalafil was well tolerated, with headache and dyspepsia being the most frequent adverse events with active treatment. Tadalafil therapy significantly enhanced erectile function and was well tolerated by men with diabetes and ED.

IT 171596-29-5, Tadalafil

RL: ADV (Adverse effect, including toxicity); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses) (effects of tadalafil on erectile dysfunction in men with diabetes)

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

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ANSWER 32 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
L5
     2002:946286 CAPLUS
ΑN
     138:24730
DN
     Preparation of pyrazinopyridoindolediones as phosphodiesterase 5 (PDE5)
TI
     inhibitors.
     Orme, Mark W.; Sawyer, Jason Scott; Schultze, Lisa M.
ΙN
     Lilly Icos LLC, USA
PA
     PCT Int. Appl., 59 pp.
SO
     CODEN: PIXXD2
DT
     Patent
LА
     English
FAN.CNT 1
                                           APPLICATION NO.
                                                            DATE
                            DATE
     PATENT NO.
                      KIND
                                           ______
     WO 2002098877
                      A1
                            20021212
                                           WO 2002-US11791 20020415
PΙ
         W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
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             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
             PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,
             UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU,
             TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,
             CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,
             BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
                            20010605
PRAI US 2001-296023P
                       P
     MARPAT 138:24730
GI
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Title compds. [I; R = halo, alkyl; R1 = H, alkenyl, alkynyl, haloalkyl, AB cycloalkyl, (cyclo)alkylalkyl, aralkyl, heteroarylalkyl, etc.; R2 = (substituted) Ph, thienyl, furyl, pyridyl, benzo-fused 5-6 membered ring; R3 = H, alkyl; R1R3 = 3-4 membered alkyl, alkenyl; R4 = H, (cyclo)alkyl, heterocycloalkyl, alkenyl, alkylenearyl, aralkyl, CORa, aryl, heteroaryl, CORa, CONRaRb, CSNRaRb, SO2Ra, SO2NRaRb, SORa, SONRaRb, alkylenearyl, etc. substituted with .gtoreq.1 of SO2NRaRb, NRaRb, CO2Ra, NRaSO2CF3, CN, NO2, CORa, ORa, etc.; Q = O, S, NRa; Het = 5-6 membered (un)satd. heterocyclyl contg. .qtoreq.1 O, N, S, and optionally substituted with alkyl, CO2Ra; Ra = H, alkyl, aralkyl, alkylenearyl, (hetero)aryl, heteroarylalkyl, alkyleneheteroaryl; Rb = H, alkyl, aryl, heteroaryl, aralkyl, heteroarylalkyl, alkyleneN(Ra)2, alkylenearyl, alkyleneHet, haloalkyl, (hetero)cycloalkyl, alkyleneheteroaryl, alkyleneCO2Ra, alkyleneheterocycloalkyl; RaRb = 5-6 membered ring optionally contg. .gtoreq.1 heteroatom; q = 0-4], were prepd. Thus, (6R, 12aR)-7-acetyl-6benzo[1,3]dioxol-5-yl-2-methyl-2,3,6,7,12,12a-hexahydropyrazino-[1',2':1,6]pyrido[3,4-b]indole-1,4-dione (prepn. given) inhibited PDE5

with IC50 = 0.007 .mu.M.

IT 477970-20-0P 477970-21-1P 477970-22-2P 477970-23-3P 477970-24-4P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(claimed compd.; prepn. of pyrazinopyridoindolediones as phosphodiesterase 5 (PDE5) inhibitors)

RN 477970-20-0 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2,7-dimethyl-, (6R,12aS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

RN 477970-21-1 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2,7-dimethyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

RN 477970-22-2 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-7-(phenylmethyl)-, (6R,12aS)- (9CI) (CA INDEX NAME)

RN 477970-23-3 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 7-acetyl-6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 477970-24-4 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-7-[(1-methylethyl)sulfonyl]-, (6R,12aR)-(9CI) (CA INDEX NAME)

Absolute stereochemistry.

IT 378788-17-1

RL: RCT (Reactant); RACT (Reactant or reagent)
 (prepn. of pyrazinopyridoindolediones as phosphodiesterase 5 (PDE5)
 inhibitors)

RN 378788-17-1 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

```
ANSWER 33 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
     2002:946116 CAPLUS
AN
     138:24726
DN
     Preparation of pyrazinopyridoindolediones and related compounds as
TI
     phosphodiesterase 5 (PDE5) inhibitors
     Orme, Mark W.; Sawyer, Jason Scott; Schultze, Lisa M.
IN
     Lilly Icos LLC, USA
PA
     PCT Int. Appl., 104 pp.
SO
     CODEN: PIXXD2
     Patent
DT
     English
LΑ
FAN.CNT 1
                      KIND
                            DATE
                                           APPLICATION NO.
                                                             DATE
     PATENT NO.
                                           WO 2002-US13703 20020502
PΙ
     WO 2002098428
                       Α1
                            20021212
             AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
             PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,
             UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU,
             TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,
             CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,
             BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
                       Ρ
                            20010605
PRAI US 2001-296041P
     MARPAT 138:24726
OS
GΙ
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Title compds. [I; R = halo, alkyl; R1 = H, alkenyl, alkynyl, haloalkyl, AΒ cycloalkyl, (cyclo)alkylalkyl, aralkyl, heteroarylalkyl; R2 = (substituted) Ph, thienyl, furyl, pyridyl, benzo-fused 5-6 membered ring; R3 = H, alkyl; R1R3 = 3-4 membered alkyl, alkenyl chain; R4 = H, (cyclo)alkyl, heterocycloalkyl, alkenyl, alkylenearyl, aralkyl, CORa, aryl, heteroaryl, CORa, CONRaRb, CSNRaRb, SO2Ra, SO2NRaRb, SORa, SONRaRb, alkylenearyl, etc. substituted with .gtoreq.1 of SO2NRaRb, NRaRb, CO2Ra, NRaSO2CF3, CN, NO2, CORa, ORa, etc.; R5 = H, ORa, alkyl, (hetero)aryl, aralkyl, alkylenearyl, alkyleneHet, cycloalkyl, heterocycloalkyl; R6 = H, alkyl, (hetero)cycloalkyl, aryl, heteroaryl, ORa, CO2Ra, CORa, CONRaRb, CSORa, CSNRaRb; X = CHR7, CHR7CH2, CR7:CH, QCHR7, bond; Q = O, S, NRa; R7 = H, ORa, alkyl, (hetero)cycloalkyl, (hetero)aryl, alkylenearyl, alkyleneheteroaryl, alkyleneHet, arylalkyl, heteroarylalkyl; Het = 5-6 membered (un) satd. heterocyclyl contg. .gtoreq.1 O, N, S, and optionally substituted with alkyl, CO2Ra; Ra = H, alkyl, aralkyl, alkylenearyl, (hetero)aryl, heteroarylalkyl, alkyleneheteroaryl; Rb = H, alkyl, aryl, heteroaryl, aralkyl, heteroarylalkyl, alkyleneN(Ra)2, alkylenearyl,

IT

alkyleneHet, haloalkyl, (hetero)cycloalkyl, alkyleneheteroaryl, alkyleneCO2Ra, alkyleneheterocycloalkyl; RaRb = 5-6 membered ring optionally contg. .gtoreq.1 heteroatom; q = 0-4; if X = CHR7, then .gtoreq.1 of R4, R5, R6, R7 .noteq. H], were prepd. Thus, (+-)-cis,trans-methyl-6-benzo[1,3]dioxol-5-yl-2,12-dimethyl-2,3,6,7,12,12a-hexahydropyrazino[1',2':1,6]pyrido[3,4-b]indole-1,3-dione (prepn. from indole given) inhibited PDE5 with IC50 = 0.004 .mu.M.

477978-85-1P 477978-89-5P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(claimed compd.; prepn. of pyrazinopyridoindolediones and related compds. as phosphodiesterase 5 (PDE5) inhibitors)

RN 477978-85-1 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2,6-dimethyl-, (6R,12aR)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 477978-89-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2,6-dimethyl-, (6R,12aS)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

IT 477978-84-0P 477978-88-4P 477978-90-8P

477979-09-2P 477979-10-5P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(prepn. of pyrazinopyridoindolediones and related compds. as phosphodiesterase 5 (PDE5) inhibitors)

RN 477978-84-0 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2,12a-dimethyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

RN 477978-88-4 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-12-phenyl-, (6R,12R,12aR)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 477978-90-8 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-6-hydroxy-2-methyl-, (6S,12aR)- (9CI) (CA INDEX NAME)

RN 477979-09-2 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2,6-dimethyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

RN 477979-10-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2,6-dimethyl-, (6S,12aR)- (9CI) (CA INDEX NAME)

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

10/031463

L5 ANSWER 34 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN

AN 2002:926946 CAPLUS

DN 139:172867

TI Erectile dysfunction: current concepts and future directions

AU Monga, M.; Rajasekaran, M.

CS Department of Urologic Surgery, University of Minnesota, Minneapolis, MN, USA

SO Archives of Andrology (2003), 49(1), 7-17 CODEN: ARANDR; ISSN: 0148-5016

PB Taylor & Francis Inc.

DT Journal; General Review

LA English

AB A review. Major advances in science and medicine have led to improved understanding of the pathophysiol. of erectile dysfunction. The development of reliable pharmacol. therapy for erectile dysfunction has led to heightened awareness in the public and medical communities. This article reviews recent clin. advances and future research directions.

IT 171596-29-5, Tadalafil
 RL: BSU (Biological study, unclassified); DMA (Drug mechanism of action);
 PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(pathophysiol. and therapeutic treatment of erectile dysfunction)

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

RE.CNT 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

```
ANSWER 35 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN .
L5
     2002:905783 CAPLUS
AN
     137:389159
DN
     Delivery of erectile dysfunction drugs through an inhalation route
TI
     Rabinowitz, Joshua D.; Zaffaroni, Alejandro C.
IN
     Alexza Molecular Delivery Corporation, USA
PA
     PCT Int. Appl., 27 pp.
SO
     CODEN: PIXXD2
DT
     Patent
LΑ
     English
FAN.CNT 21
                                            APPLICATION NO.
                                                              DATE
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     PATENT NO.
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                                            WO 2002-US16398
                                                              20020522
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     WO 2002094219
                       Α3
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             AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
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             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
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                             20030123
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                       A1
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             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
              PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,
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         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,
              CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,
              BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
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                                            US 2002-150857
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     US 2003012737
     US 2003015189
                        A1
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                                            US 2002-153831
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                             20030123
                                            US 2002-153839
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     US 2003017119
                        A1
                                            US 2002-155703
                                                              20020522
                        A1
                             20030123
     US 2003017120
                                            US 2002-155705
                                                              20020522
                             20030130
     US 2003021755
                        Α1
                                            US 2002-155097
                                                              20020523
     US 2003000518
                        Α1
                             20030102
                                            US 2002-154594
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                             20030123
     US 2003015190
                        A1
                                                              20020523
                             20030123
                                            US 2002-154765
     US 2003017114
                        Α1
                             20010524
PRAI US 2001-294203P
                        Ρ
     US 2001-317479P
                        Ρ
                             20010905
     The present invention relates to aerosols contg. erectile dysfunction
AB
     drugs that are used in inhalation therapy. The aerosol comprises
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particles comprising at least 5% by wt. of an erectile dysfunction drug.

The method comprises: a) heating a compn., wherein the compn. comprises at least 5% by wt. of an erectile dysfunction drug, to form a vapor; and, b) allowing the vapor to cool, thereby forming a condensation aerosol comprising particles, which is inhaled by the mammal. Kits are described and a general procedure for volatilizing compds. is given.

171596-29-5, Tadalafil IT

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses) (delivery of erectile dysfunction drugs through an inhalation route)

RN

171596-29-5 CAPLUS
Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-CN2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

10/031463

L5 ANSWER 36 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN

AN 2002:899323 CAPLUS

DN 139:78085

TI Phosphodiesterase 5 inhibitors

AU Stamford, Andrew W.

CS Schering-Plough Research Institute, Kenilworth, NJ, 07033, USA

SO Annual Reports in Medicinal Chemistry (2002), 37, 53-64 CODEN: ARMCBI; ISSN: 0065-7743

PB Elsevier Science

DT Journal; General Review

LA English

AB A review discusses the clin. development of phosphodiesterase5 inhibitors for the treatment of erectile dysfunction (ED), and the recent advances in the medicinal chem. of selective PDE5 inhibitors that have been reported. It also discusses the potential therapeutic indications for PDE5 inhibitors other than for ED.

IT **171596-29-5**, Tadalafil

RL: ADV (Adverse effect, including toxicity); DMA (Drug mechanism of action); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(phosphodiesterase 5 inhibitors for treating impotence)

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

RE.CNT 77 THERE ARE 77 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

- L5 ANSWER 37 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
- AN 2002:875588 CAPLUS
- DN 138:378373
- TI Selective phosphodiesterase type 5 inhibition using tadalafil for the treatment of erectile dysfunction
- AU Kuan, James; Brock, Gerald
- CS Dept. of Surgery, Division of Urology, St. Joseph's Health Centre, London, ON, Can.
- SO Expert Opinion on Investigational Drugs (2002), 11(11), 1605-1613 CODEN: EOIDER; ISSN: 1354-3784
- PB Ashley Publications Ltd.
- DT Journal; General Review
- LA English
- A review. Erectile dysfunction (ED) pharmacotherapy has undergone AB dramatic advances over the past decade, since the introduction of phosphodiesterase type 5 inhibitors (PDE5). The availability of an oral agent, sildenafil, able to restore erectile function in the majority of men with an org. basis to their dysfunction, transformed the management. The nos. of men seeking medical attention for ED, along with the increased comfort of physicians treating it, has resulted in enhanced management of this condition. In spite of these advances, there exist a significant no. of men who remain unsuccessfully treated with sildenafil. Development of new PDE5 inhibitors, with the promise of enhanced selectivity, longer duration of action, increased potency and greater ease of use are currently in the final stages of regulatory review in many countries. Tadalafil is the first such agent to gain preliminary EU approval and is reviewed in detail in this report. Focusing on its phase II/III trial results, tadalafil appears to have an enhanced period of responsiveness extending out to 36 h in 60% of men using the 20 mg dose. Efficacy across a large population of men with ED of various causes (n = 1112) is in accordance with the other PDE5 inhibitors at 81%. Side effects are generally mild-to-moderate with study drop-out rate at 1.7% in the active arm compared to 1.1% among those receiving placebo. In summary, this agent will likely play an important role in the management of ED across a broad spectrum of etiologies, once past the ongoing regulatory review process.
- IT **171596-29-5**, Tadalafil
 - RL: ADV (Adverse effect, including toxicity); PAC (Pharmacological activity); PKT (Pharmacokinetics); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(selective PDE5 inhibition using tadalafil for treatment of erectile dysfunction)

- RN 171596-29-5 CAPLUS
- CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

- L5 ANSWER 38 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
- AN 2002:820932 CAPLUS
- DN 137:304567
- TI Efficacy and safety of tadalafil for the treatment of erectile dysfunction: results of integrated analyses
- AU Brock, Gerald B.; McMahon, Chris G.; Chen, K. K.; Costigan, Timothy; Shen, Wei; Watkins, Vish; Anglin, Greg; Whitaker, Steve
- CS Department of Surgery, Division of Urology, Faculty of Medicine and Dentistry, University of Western Ontario, London, ON, Can.
- Journal of Urology (Hagerstown, MD, United States) (2002), 168(4, Pt. 1), 1332-1336

 CODEN: JOURAA; ISSN: 0022-5347
- PB Lippincott Williams & Wilkins
- DT Journal
- LA English
- We conducted integrated analyses of the efficacy and safety of tadalafil, AΒ a potent, selective phosphodiesterase 5 inhibitor, for the treatment of erectile dysfunction. A total of 1,112 men with a mean age of 59 yr (range 22 to 82) and mild to severe erectile dysfunction of various etiologies were randomized to placebo or tadalafil, taken as needed without food or alc. restrictions, at fixed daily doses of 2.5 mg., 5 mg., 10 mg., or 20 mg. in 5 randomized, double-blind, placebo controlled trials lasting 12 wk. The 3 co-primary outcomes were changes from baseline in the erectile function domain of the International Index of Erectile Function and the proportion of "yes" responses to questions 2 and 3 of the Sexual Encounter Profile. Addnl. efficacy instruments included a Global Assessment Question. Compared with placebo, tadalafil significantly enhanced all efficacy outcomes. Patients receiving 20 mg. tadalafil experienced a significant mean improvement of 7.9 in International Index of Erectile Function erectile function domain score from baseline (p <0.001 vs. placebo), 75% of intercourse attempts (Sexual Encounter Profile question 3, a secondary efficacy outcome) were successfully completed (p < 0.001 vs. placebo) and 81% reported improved erections at end point compared with 35% in the control group (p <0.001). Tadalafil was consistently efficacious across disease severities and etiologies, as well as in patients of all ages. Tadalafil was well tolerated, and headache and dyspepsia were the most frequent adverse events. Tadalafil was effective and well tolerated in this patient population.
- IT 171596-29-5, Tadalafil
 RL: ADV (Adverse effect, including toxicity); PAC (Pharmacological
 activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (tadalafil for treatment of erectile dysfunction)
- RN 171596-29-5 CAPLUS
- CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

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ANSWER 39 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
L5
    2002:792003 CAPLUS
ΑN
    137:299922
DN
    Nasal spray compositions containing cGMP-PDE inhibitors and local
ΤI
    anesthetics for the treatment of male erectile disfunction
     Serno, Peter; Ohm, Andreas; Barth, Wolfgang; Bauer, Richard-Josef;
IN
     Siefert, Hans-Martin; Zimmer, Dieter
    Bayer AG, Germany
PΑ
    Ger. Offen., 12 pp.
SO
    CODEN: GWXXBX
    Patent
DT
    German
LA
FAN.CNT 1
                                        APPLICATION NO. DATE
    PATENT NO.
                   KIND DATE
                                         _____
     -----
                                        DE 2001-10118305 20010412
PI
    DE 10118305
                    A1 20021017
                                         WO 2002-EP3977 20020410
    WO 2002083108 A2
                           20021024
    WO 2002083108
                    A3
                           20030410
           AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
            CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
            GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
            LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
            PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,
            UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU,
        RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,
            CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,
            BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
PRAI DE 2001-10118305 A
                           20010412
    MARPAT 137:299922
OS
     The present invention concerns compns. for nasal application of cGMP-PDE
AΒ
     inhibitors, in particular of PDE5-inhibitors, and local anesthetics; local
     anesthetics is not benzylalc. The compns. further contain antioxidants,
     surfactants, stabilizers, wetting agents, etc.; nasal sprays and powder
     inhalants are claimed. Thus a powder compn. contained (kg): Sildenafil
     citrate, micronized 25.0; lidocaine hydrochloride 10.0; lactose 65.0.
     homogenized mixt. was filled in aliquots of 20 mg into inhaler vials.
     171596-29-5
IT
     RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
        (nasal compns. contg. cGMP-PDE inhibitors and local anesthetics for
        treatment of male erectile disfunction)
     171596-29-5 CAPLUS
RN
     Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-
CN
     2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)
```

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ANSWER 40 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
L5
     2002:777881 CAPLUS
AN
     137:278918
DN
     Preparation of cyclopentyl-substituted glutaric acid monoamides as neutral
ΤI
     endopeptidase inhibitors for treating female sexual arousal disorder and
     related conditions
     Challenger, Stephen; Cook, Andrew Simon; Gillmore, Adam Thomas; Middleton,
IN
     Donald Stuart; Pryde, David Cameron; Stobie, Alan
     Pfizer Limited, UK; Pfizer Inc.
PA
     PCT Int. Appl., 130 pp.
SO
     CODEN: PIXXD2
     Patent
DT
     English
LA
FAN.CNT 1
                                           APPLICATION NO.
                                                             DATE
     PATENT NO.
                      KIND
                            DATE
                                                             20020318
                                           WO 2002-IB807
                            20021010
PI
     WO 2002079143
                       A1
            AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
             PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA,
```

UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

US 2002-96218

20020312

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,

The invention relates to cyclopentyl-substituted glutaric acid monoamides AB (shown as I; e.g. (2S)-2-[[1-[[[3-(4-chlorophenyl)propyl]amino]carbonyl]cy clopentyl]methyl]-4-methoxybutanoic acid), inhibition of neutral endopeptidase (NEP) enzyme, methods of prepn. and uses, e.g. treating

GΙ

female sexual arousal disorder. In I, R1 is optionally substituted C1-6alkyl, carbocyclyl, heterocyclyl, H, C1-6alkoxy, amino, or sulfonylamino. X is the linkage -(CH2)n- or -(CH2)q-0- (wherein Y is attached to the O); wherein one or more H atoms in linkage X may be replaced independently by C1-4alkoxy; hydroxy; hydroxyC1-3alkyl; C3-7cycloalkyl; carbocyclyl; heterocyclyl; or by C1-4alkyl optionally substituted by one or more fluoro or Ph groups; n is 3-7; and q is 2-6; and Y is optionally substituted Ph or pyridyl. One process for prepg. I involves reacting II (Prot = protecting group) with Y-X-NH2 to give protected I, which is then deprotected and later optionally converted to a salt; other methods involve asym. hydrogenation of an alkene precursor to II. More than 100 example prepns. of intermediates and claimed compds. are included; most of the claimed compds. are N-phenpropyl amides. IC50 values against neutral endopeptidase and selectivity against neutral endopeptidase vs. ACE are given for some of the claimed compds.; for example, 3-[1-[[[3-(2,3-dihydrobenzofuran-5-yl)propyl]amino]carbonyl]cyclo pentyl]propanoic acid showed an IC50 against NEP of 3 nM and a >300 selectivity against ACE. Test results for use of (2S)-2-[[1-[[[3-(4chlorophenyl)propyl]amino]carbonyl]cyclopentyl]methyl]-4-methoxybutanoic acid in rabbit models of female sexual arousal response and male erectile response are included.

IT 171596-29-5, (6R,12AR)-2,3,6,7,12,12a-hexahydro-2-methyl-6-(3,4methylenedioxyphenyl)pyrazino[2',1':6,1]pyrido[3,4-b]indole-1,4-dione
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL
(Biological study); USES (Uses)

(in combination with cyclopentyl-substituted glutaric acid monoamide neutral endopeptidase inhibitors for treating female sexual arousal disorder and related conditions)

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

10/031463

L5 ANSWER 41 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN

AN 2002:551103 CAPLUS

DN 137:103318

TI Tadalafil: an oral selective phosphodiesterase 5 inhibitor for treatment of erectile dysfunction

AU Kim, Sunghyun; Narayanan, Seethalakshmi; Song, Jessica C.

CS Department of Pharmacy Services, St Joseph's Medical Center, Stockton, CA, USA

SO Formulary (2002), 37(6), 289-290, 293-296 CODEN: FORMF9; ISSN: 1082-801X

PB Advanstar Communications, Inc.

DT Journal; General Review

LA English

AB A review. Tadalafil (IC351) is a selective inhibitor of phosphodiesterase 5 (PDE5) under FDA review for treatment of erectile dysfunction (ED) and diabetes-related ED. If approved, it will join the widely used PDE5 inhibitor sildenafil citrate as an oral therapy for ED management. Placebo-controlled trials have shown tadalafil to be safe and effective at doses of 5 to 25 mg for treating ED and doses of 10 to 20 mg for treating diabetes-related ED. Tadalafil is rapidly absorbed, and patients have shown responsiveness (with multiple successful intercourse attempts) for up to 24 h after administration. Tadalafil undergoes hepatic metab. and is largely metabolized by the cytochrome P 450 3A4 isoenzyme. Headache and dyspepsia have been the most common adverse effects reported with the drug. According to the results from the largest clin. trials conducted to date, tadalafil has produced no abnormal visual effects and no clin. significant changes in blood pressure or electrocardiog. parameters.

IT 171596-29-5, Tadalafil

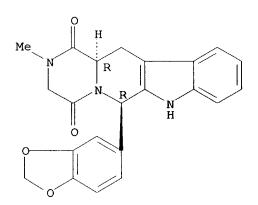
RL: ADV (Adverse effect, including toxicity); PAC (Pharmacological activity); PKT (Pharmacokinetics); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(tadalafil, oral selective phosphodiesterase 5 inhibitor for treatment of erectile dysfunction)

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



RE.CNT 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

10/031463

L5 ANSWER 42 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN

AN 2002:524539 CAPLUS

DN 137:87748

TI Tadalafil (Cialis) for men with erectile dysfunction

AU Eardley, I.; Cartledge, J.

CS Department of Urology, St James' University Hospital, Leeds, UK

SO International Journal of Clinical Practice (2002), 56(4), 300-304 CODEN: IJCPF9; ISSN: 1368-5031

PB Medicom International

DT Journal; General Review

LA English

AB A review. Tadalafil is an inhibitor of phosphodiesterase type 5, and is currently undergoing regulatory review in the US and in Europe. Its chem. structure is significantly different from sildenafil, and in vitro studies confirm significant potency for PDE5 inhibition, with little activity against most of the other isoforms of the enzyme including PDE6, which is the isoform of the enzyme found within the retina. The half-life of tadalafil is 17.5 h and clin. studies suggest significant activity 24 h post-dosing. As with sildenafil, efficacy depends upon a normal sexual stimulus, and the drug can taken be as required. Tadalafil is effective in the treatment of men with erectile dysfunction, and it appears to have a relatively mild side-effect profile, with no visual side-effects noted.

IT 171596-29-5, Cialis

RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(tadalafil (Cialis) for men with erectile dysfunction)

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

- L5 ANSWER 43 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
- AN 2002:427673 CAPLUS
- DN 137:3711
- TI Cells and animals homozygous or heterozygous for a knockout of the PDE11A gene and their uses
- IN Burslem, Martin F.; Harrow, Ian Dennis; Lanfear, Jeremy; Phillips, Stephen C.
- PA Pfizer Limited, UK; Pfizer Inc.
- SO Eur. Pat. Appl., 31 pp.

CODEN: EPXXDW

- DT Patent
- LA English
- FAN.CNT 1

	PATENT NO.				KIND		DATE			APPLICATION NO.				DATE				
PI	EP 1211313			A2		20020605			EP 2001-308959					20011022				
	ΕP	1211	1211313			3	20030423											
		R:	AT,	BE,	CH,	DE,	DK,	ES,	FR,	GB, G	SR,	IT,	LI,	LU,	NL,	SE,	MC,	PT,
			ΙE,	SI,	LT,	LV,	FI,	RO,	MK,	CY, A	L,	TR						•
PRAI	US	2003061625			Α.	L .	20030327			US 2001-40570				20011101				
	GB	B 2000-26727 B 2001-11710 S 2000-255689P			A 2		20001101											
	GB						2001	0514										
	US						20001214											
	US	2001	-2934	111P	P		2001	0524										

AB Animal cells and animals carrying a knockout of the gene for the cyclic nucleotide phosphodiesterase PDE11 are described for use in anal. of the role of the enzyme, esp. in spermatogenesis and in the screening of drugs for regulation of spermatogenesis. Heterozygous knockout mice show lowered levels of spermatogenesis. The effect of the knockout on patterns of gene expression was analyzed by microarray hybridization. Known inhibitors of cyclic nucleotide phosphodiesterases were tested for their ability to inhibit PDE11. The pattern of inhibition was similar to, but distinct from, that for PDE5. Array hybridization was used to analyze the effects of PDE11 knockout on gene expression in testis. Twenty-four genes (18 down-regulated and 6 up-regulated) were identified. These gene products may themselves be therapeutic targets for PDE11-related disease (no data).

IT **171596-29-5**, IC-351

RL: PAC (Pharmacological activity); BIOL (Biological study) (as inhibitor of PDE11; cells and animals homozygous or heterozygous for knockout of PDE11A gene and their uses)

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

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ANSWER 44 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
L5
     2002:391540 CAPLUS
AN
     136:380144
DN
     Phosphodiesterase V inhibitors for the treatment of premature ejaculation
TI
     Boolell, Mitradev
IN
     Pfizer Limited, UK; Pfizer Inc.
PA
     PCT Int. Appl., 31 pp.
SO
     CODEN: PIXXD2
DT
     Patent
LΑ
     English
FAN.CNT 1
                                           APPLICATION NO.
                                                            DATE
     PATENT NO.
                      KIND DATE
                            _____
                                           -----
     WO 2002040027
                      A1
                            20020523
                                           WO 2001-IB2180
                                                            20011119
PΙ
         W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
             PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA,
             UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,
             CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,
             BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
                                           US 2001-990955
                            20020711
                                                             20011116
     US 2002091129
                      A1
                            20020527
                                           AU 2002-15149
                                                             20011119
     AU 2002015149
                       Α5
                            20030820
                                           EP 2001-983728
                                                             20011119
     EP 1335730
                       A1
         R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
                                           BR 2001-15413
                                                             20011119
     BR 2001015413
                       Α
                            20031007
PRAI GB 2000-28245
                            20001120
                       Α
                            20010109
     US 2001-260564P
                       Ρ
     WO 2001-IB2180
                       W
                            20011119
     The invention relates to the use of cGMP phosphodiesterase V inhibitors,
AB
     including in particular the compd. sildenafil, for the treatment of
     premature ejaculation in patients with normal erectile function.
IT
     171596-29-5, IC 351
     RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL
     (Biological study); USES (Uses)
        (phosphodiesterase V inhibitors for treatment of premature ejaculation)
     171596-29-5 CAPLUS
RN
     Pyrazino [1',2':1,6] pyrido [3,4-b] indole-1,4-dione, 6-(1,3-b) enzodioxol-5-yl)-
CN
     2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)
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RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

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ANSWER 45 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
L5
     2002:353456 CAPLUS
AN
     136:369739
DN
     Preparation of pyrazino[1',2':1,6]pyrido[3,4-b]indole derivatives as
ΤI
     phosphoesterase inhibitors for use as therapeutic agents
     Orme, Mark W.; Sawyer, Jason Scott; Schultze, Lisa M.
IN
     Lilly Icos L.L.C., USA
PA
     PCT Int. Appl., 66 pp.
SO
     CODEN: PIXXD2
DT
     Patent
     English
LΑ
FAN.CNT 1
     PATENT NO.
                      KIND
                            DATE
                                            APPLICATION NO.
                                                             DATE
                                           WO 2001-US31364 20011009
PI
     WO 2002036593
                       A1
                            20020510
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             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL,
             PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG,
             US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
             DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
             BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
                       Α5
                            20020515
                                           AU 2002-11493
                                                             20011009
     AU 2002011493
                            20030806
                                            EP 2001-979546
                                                             20011009
     EP 1332144
                       A1
           AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
         R:
             IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
                                           US 2003-398720
                                                             20030409
                            20031211
     US 2003229080
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PRAI US 2000-246257P
                            20001106
                       Ρ
     WO 2001-US31364
                            20011009
                       W
OS
     MARPAT 136:369739
GI
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 N
 N
 R^{1}
 R^{2}
 R^{3}
 R^{2}
 R^{3}

AB 2,3,6,7,12,12A-hexahydropyrazino[1',2':1,6]pyrido[3,4-b]indole derivs., such as I [R = halo, alkyl; R1 = H, alkyl, alkenyl, alkynyl, haloalkyl, cycloalkyl, heteroarylalkyl, etc.; R2 = monocyclic arom. ring, such as benzene, thiophene, furan, pyridine, etc.; R3 = H, alkyl; R1,R3 = fused carbocyclic ring; X, Y = C0, S0, S02, CS, C(Ra)2; Ra = H, alkyl, benzyl; q

= 0-4], pharmaceutically acceptable salts and solvates thereof, were prepd. for pharmaceutical use as phosphodiesterase inhibitors for the treatment of conditions such as erectile dysfunction, female arousal disorder, angina, hypertension, and vascular disease. Thus, pyrazinopyridoindole deriv. II was prepd. by a multistep procedure starting with D-tryptophan Me ester, piperonal and chloroacetaldehyde. The prepd. heterocycles were tested for phosphodiesterase V (PDE5) inhibitory activity with II exhibiting an IC50 of 54 nM.

IT 171596-29-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(prepn. of pyrazino[1',2':1,6]pyrido[3,4-b]indole derivs. as phosphoesterase inhibitors for use as therapeutic agents)

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

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L5 ANSWER 46 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
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AN 2002:314395 CAPLUS

DN 136:335540

TI Use of PDE V inhibitors for improved fecundity in mammals

IN Westbrook, Simon Lempriere; Zanzinger, Johannes Friedrich

PA Pfizer Limited, UK; Pfizer Inc.

SO Eur. Pat. Appl., 20 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

11111	PAT	TENT NO.	KIND	DATE	APPLICATION NO. DATE	
ΡI	EP	1199070	A2	20020424	EP 2001-308684 20011011	
		R: AT, BE,	CH, DE	, DK, ES,	FR, GB, GR, IT, LI, LU, NL, SE, MC, PT	,
		IE, SI,	LT, LV	, FI, RO, 1	MK, CY, AL, TR	
	US	2003018036	A1	20030123	US 2001-982445 20011018	
	US	6548508	B2	20030415		
	JР	2002220346	A2	20020809	JP 2001-322195 20011019	
	US	2003018037	A1	20030123	US 2002-229534 20020827	
PRAI	GB	2000-25782	Α	20001020		
	US	2000-253338P	P	20001128		
	US	2001-982445	A1	20011018		

AB The invention relates to the use of a cyclic guanosine 3',5'-monophosphate phosphodiesterase type five (cGMP PDE V) inhibitor for increasing fecundity in a mammal by one or more of (a) promoting the growth of an oocyte, zygote, blastocyst, embryo and/or fetus, (b) increasing the rate or probability of survival of an embryo and/or fetus and (c) increasing the birth wt. of a progeny, or for increasing milk productivity. I.v. and tablet formulations are exemplified. Formulations and packs contg. the PDE V inhibitors for pharmaceutical or veterinary use are claimed.

IT **171596-29-5**, IC-351

RL: AGR (Agricultural use); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses) (use of PDE V inhibitors for improved fecundity in mammals)

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

```
ANSWER 47 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
     2002:241329 CAPLUS
AN
     136:284433
DN
     Administration of phosphodiesterase inhibitors for the treatment of
ΤI
    premature ejaculation
     Wilson, Leland F.; Doherty, Paul C.; Place, Virgil A.; Smith, William L.;
IN
     Abdel-Hamid, Abdou Ali Ibrahim Aboubakr
PA
     U.S. Pat. Appl. Publ., 21 pp., Cont.-in-part of U.S. Ser. No. 467,094.
SO
    CODEN: USXXCO
     Patent
DT
     English
LΑ
FAN.CNT 7
    PATENT NO.
                     KIND DATE
                                          APPLICATION NO.
                                                           DATE
                     ----
                           -----
                                           _____
PΙ
     US 2002037828
                     A1
                           20020328
                                          US 2001-888250
                                                            20010621
     US 6403597
                      B2
                           20020611
                                                            19981027
    US 6037346
                            20000314
                                          US 1998-181070
                      Α
    US 6548490
                            20030415
                                           US 1999-467094
                                                            19991210
                      B1
                            20030103
                                          WO 2002-US9415
                                                            20020325
     WO 2003000343
                      A2
            AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
        W:
            CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
            GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
            LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
             PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,
            UA, UG, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ,
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,
             CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,
             BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
                      B2 .
                           19971028
PRAI US 1997-958816
                      A2
                            19981027
     US 1998-181070
     US 1999-467094
                      A2
                            19991210
     US 2001-888250
                      Α
                            20010621
AB
     A method is provided for treatment of premature ejaculation by
     administration of a phosphodiesterase inhibitor, e.g., an inhibitor of a
     Type III, Type IV, or Type V phosphodiesterase. In a preferred
     embodiment, administration is on as "as needed" basis, i.e., the drug is
     administered immediately or several hours prior to sexual activity.
     Pharmaceutical formulations and packaged kits are also provided.
     Zaprinast 1.0, mannitol 1.0, microcryst. cellulose 2.0, and magnesium
     stearate 10 mg are blended in a suitable mixer and then compressed into
     sublingual tablets. Each sublingual tablet contains 10 mg zaprinast.
     171596-29-5, GF 196960
IT
     RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
        (GF 196960; administration of phosphodiesterase inhibitors for
        treatment of premature ejaculation)
RN
     171596-29-5 CAPLUS
     Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-
CN
```

2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

```
L5
     ANSWER 48 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
     2002:142493 CAPLUS
ΑN
     136:194255
DN
ΤI
     Treatment of the insulin resistance syndrome
     Fryburg, David Albert; Gibbs, Earl Michael; Koppiker, Nandan Parmanand
IN
     Pfizer Limited, UK; Pfizer Inc.
PA
     PCT Int. Appl., 61 pp.
SO
     CODEN: PIXXD2
DT
     Patent
LΑ
     English
FAN.CNT 1
     PATENT NO.
                        KIND
                              DATE
                                               APPLICATION NO.
                                                                  DATE
     WO 2002013798
                        A2
                              20020221
                                               WO 2001-IB1428
PI
                                                                  20010806
     WO 2002013798
                        А3
                              20030123
              AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
              CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
              GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
              LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT,
              RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US,
              UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
          RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
              DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
              BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
                                               AU 2001-76607
                        Α5
                              20020225
     AU 2001076607
                                                                  20010806
                                               EP 2001-954266
                              20030507
     EP 1307183
                         A2
                                                                  20010806
          R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
              IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
                                               US 2001-927525
     US 2002165237
                         A1
                              20021107
                                                                  20010810
                                               WO 2002-IB315
     WO 2002060422
                         A2
                               20020808
                                                                  20020130
     WO 2002060422
                         А3
                               20021010
              AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
              CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
              GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU,
              TJ, TM
          RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,
              CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,
              BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
     US 2002143015
                        A1
                              20021003
                                               US 2002-60788
                                                                  20020130
                              20031029
                                               EP 2002-716245
                                                                  20020130
     EP 1355651
                         A2
            AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
              IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
                              20030904
                                               US 2003-368826
     US 2003166662
                                                                  20030219
                         A1
PRAI US 2000-224928P
                              20000811
                         Р
     GB 2000-30649
                         Α
                              20001215
     US 2001-266083P
                         Р
                              20010202
     GB 2001-6465
                         Α
                              20010315
     GB 2001-6468
                         Α
                              20010315
     GB 2001-17134
                         Α
                              20010713
     US 2000-256431P
                         Ρ
                              20001218
     US 2001-292506P
                         P
                              20010521
     WO 2001-IB1428
                              20010806
                         W
     US 2001-927525
                              20010810
                         B1
     WO 2002-IB315
                         W
                              20020130
AB
     Use of a selective cGMP PDE5 inhibitor or a pharmaceutical compn. thereof
```

in the prepn. of a medicament for the curative, palliative or prophylactic treatment of the insulin resistance syndrome wherein the insulin resistance syndrome means the concomitant existence in a subject of two or more of: dyslipidemia; hypertension; type 2 diabetes mellitus, impaired glucose tolerance (IGT) or a family history of diabetes; hyperuricemia and/or gout; a pro-coagulant state; atherosclerosis; or truncal obesity wherein said use can occur alone or in combination with other agents to treat the insulin resistance syndrome or individual aspects of the insulin resistance syndrome.

IT **171596-29-5**, IC-351

RL: DMA (Drug mechanism of action); PAC (Pharmacological activity); PKT (Pharmacokinetics); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(treatment of insulin resistance syndrome)

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

```
ANSWER 49 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
L5
     2002:122770 CAPLUS
AN
     136:178015
DN
    Drugs for incontinence - salified and nonsalified nitric oxide-donors and
ΤI
    phosphodiesterase inhibitors
IN
    Del Soldato, Piero; Benedini, Francesca
PA
    Nicox S.A., Fr.
     PCT Int. Appl., 59 pp.
SO
    CODEN: PIXXD2
    Patent
DT
     English
LА
FAN.CNT 1
                                          APPLICATION NO. DATE
     PATENT NO.
                     KIND DATE
                     ____
                           _____
                                          _____
ΡI
    WO 2002011707
                     A2
                           20020214
                                          WO 2001-EP8734
                                                            20010727
                           20021205
    WO 2002011707
                     A3
            AE, AG, AL, AU, BA, BB, BG, BR, BZ, CA, CN, CR, CU, CZ, DM, DZ,
            EE, GD, GE, HR, HU, ID, IL, IN, IS, JP, KP, KR, LC, LK, LR, LT,
            LV, MA, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, TR, TT, UA,
            US, UZ, VN, YU, ZA, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
            DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
             BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
                      A5
                           20020218
                                          AU 2001-91691
                                                            20010727
    AU 2001091691
                                          EP 2001-971798
     EP 1307184
                      A2
                           20030507
                                                            20010727
         R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
            IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
                           20031030
                                          US 2003-343330
                                                           20030206
    US 2003203899
                     A1
PRAI IT 2000-MI1848
                           20000808
                      Α
    WO 2001-EP8734
                           20010727
                      W
    MARPAT 136:178015
OS
    Use in the incontinence of one or more of the following classes of drugs
AB
    selected from the following: (B) salified and nonsalified nitric
    oxide-donor drugs, of formula: A - X1 - N(O)z, (B') nitrate salts of drugs
    used for the incontinence, and which do not contain in the mol. a nitric
     oxide donor group; (C) org. or inorg. salts of compds. inhibiting
    phosphodiesterases.
IT
     171596-29-5
     RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL
     (Biological study); USES (Uses)
        (salified and nonsalified nitric oxide-donors and phosphodiesterase
        inhibitors for treatment of incontinence)
     171596-29-5 CAPLUS
RN
     Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-
CN
     2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)
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ANSWER 50 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
L5
    2002:107344 CAPLUS
AN
    136:151441
DN
    Preparation of fused heterocyclic derivatives as phosphodiesterase
ΤI
    inhibitors
    Orme, Mark W.; Sawyer, Jason Scott; Schultze, Lisa M.
IN
    Lilly Icos L.L.C., USA
PA
    PCT Int. Appl., 105 pp.
SO
    CODEN: PIXXD2
    Patent
DT
    English
LΑ
FAN.CNT 1
                     KIND DATE
                                        APPLICATION NO. DATE
    PATENT NO.
                                          ______
                     ____
                           -----
                                        WO 2001-US21678 20010709
PI
    WO 2002010166
                     A1
                           20020207
        W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
            CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
            GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
            LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT,
            RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US,
            UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
            DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
            BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
                                         AU 2001-71948
                                                          20010709
                      A5
                          20020213
    AU 2001071948
                           20030502
                                         EP 2001-951008 20010709
    EP 1305313
                      A1
         R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
            IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
                     A1 20031106
                                          US 2003-333146
                                                           20030115
     US 2003207867
                      Ρ
                           20000802
PRAI US 2000-222451P
                           20010709
    WO 2001-US21678
                      W
    MARPAT 136:151441
OS
GΙ
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$$\begin{array}{c|c} & & & \\ & & & \\ R_q & & & \\ N_H & & & \\ R_2 & & O \end{array}$$

Ι

AB Compds. I [R = halo, alkyl; q = 0-4; R1 = H, alkyl, alkenyl, alkynyl, haloalkyl, cycloalkyl, cycloalkylalkyl, arylalkyl, heteroarylalkyl; R2 is an optionally substituted monocyclic arom. ring selected from benzene, thiophene, furan, and pyridine or an optionally substituted bicyclic ring; X = NH or substituted imino, O, S, substituted methylene or ethylene; the substituents may form addnl. rings] and their salts and solvates were prepd. for use as phosphodiesterase (PDE) inhibitors. Thus, compd. II was prepd. by a multistep procedure starting with coupling of L-tryptophan Me ester with CbzNMeCMe2CO2H (Cbz = benzyloxycarbonyl) and showed IC50 = 161.0 nM for inhibition of cGMP-PDE.

IT 395665-39-1P 395665-40-4P

RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

(prepn. of fused heterocyclic derivs. as phosphodiesterase inhibitors)

RN 395665-39-1 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-3-propanoic acid, 6-(1,3-benzodioxol-5-yl)-1,2,3,4,6,7,12,12a-octahydro-1,4-dioxo-, 1,1-dimethylethyl ester, (3S,6R,12aR)- (9CI) (CA INDEX NAME)

RN 395665-40-4 CAPLUS CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-3-propanoic acid, 6-(1,3-benzodioxol-5-yl)-1,2,3,4,6,7,12,12a-octahydro-1,4-dioxo-, (3S,6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

395665-35-7P 395665-36-8P 395665-41-5P 395665-42-6P 395665-47-1P 395665-49-3P 395665-51-7P 395665-53-9P 395665-55-1P 395665-57-3P 395665-63-1P 395665-63-1P 395665-65-3P 395665-67-5P 395665-69-7P 395665-70-0P 395665-71-1P 395665-72-2P 395665-73-3P 395665-75-5P 395665-76-6P 395665-77-7P 395665-78-8P 395665-79-9P 395665-81-3P 395665-91-5P 395665-95-9P 395665-96-0P 395665-98-2P RL: PAC (Pharmacological activity); SPN (Therapeutic use): BIOL (Biological stud

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(prepn. of fused heterocyclic derivs. as phosphodiesterase inhibitors) 395665-35-7 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2,3,3-trimethyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

RN

10/031463

Absolute stereochemistry.

RN 395665-36-8 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-3-propanamide, 6-(1,3-benzodioxol-5-yl)-1,2,3,4,6,7,12,12a-octahydro-1,4-dioxo-, (3S,6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 395665-41-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-3-propanoic acid, 6-(1,3-benzodioxol-5-yl)-1,2,3,4,6,7,12,12a-octahydro-1,4-dioxo-, 1-methylethyl ester, (3S,6R,12aR)- (9CI) (CA INDEX NAME)

RN 395665-42-6 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-3-(hydroxymethyl)-, (3R,6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

RN 395665-47-1 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-3-[2-(1H-tetrazol-5-yl)ethyl]-, (3S,6R,12aR)-(9CI) (CA INDEX NAME)

RN 395665-49-3 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 3-(4-aminobutyl)-6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-, (3S,6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

$$H_2N$$
 (CH₂) $\frac{1}{4}$ $\frac{1}{6}$ $\frac{1}{6}$

RN 395665-51-7 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-3-ethanesulfonamide, 6-(1,3-benzodioxol-5-yl)-1,2,3,4,6,7,12,12a-octahydro-1,4-dioxo-, (3S,6R,12aR)- (9CI) (CA INDEX NAME)

$$\begin{array}{c|c} & & & & \\ & & & \\ H_2N & & & \\ & & & \\ O & O & O & \\ & & & \\ \end{array}$$

RN 395665-53-9 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-3-hexanoic acid, 6-(1,3-benzodioxol-5-yl)-1,2,3,4,6,7,12,12a-octahydro-2-methyl-1,4-dioxo-, (3S,6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 395665-55-1 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-3-acetic acid, 6-(1,3-benzodioxol-5-yl)-1,2,3,4,6,7,12,12a-octahydro-1,4-dioxo-, 1,1-dimethylethyl ester, (3S,6R,12aR)- (9CI) (CA INDEX NAME)

RN 395665-57-3 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-3-[(phenylmethoxy)methyl]-, (3S,6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 395665-59-5 CAPLUS

CN Benzoic acid, 4-[[(3S,6R,12aR)-6-(1,3-benzodioxol-5-yl)-1,2,3,4,6,7,12,12a-octahydro-2-methyl-1,4-dioxopyrazino[1',2':1,6]pyrido[3,4-b]indol-3-yl]methyl]- (9CI) (CA INDEX NAME)

RN 395665-61-9 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-3-acetic acid, 6-(1,3-benzodioxol-5-yl)-1,2,3,4,6,7,12,12a-octahydro-1,4-dioxo-, (3S,6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 395665-63-1 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-3-acetic acid, 6-(1,3-benzodioxol-5-yl)-1,2,3,4,6,7,12,12a-octahydro-1,4-dioxo-, (3R,6R,12aR)- (9CI) (CA INDEX NAME)

RN 395665-65-3 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-3-(1H-pyrazol-1-ylmethyl)-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 395665-67-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 3-(2-aminoethyl)-6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-, (3S,6R,12aR)- (9CI) (CA INDEX NAME)

$$\begin{array}{c|c} & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & \\ & & & \\ &$$

RN 395665-69-7 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 3-(aminomethyl)-6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-, (3S,6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 395665-70-0 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-3-(chloromethyl)-2,3,6,7,12,12a-hexahydro-, (3R,6R,12aR)- (9CI) (CA INDEX NAME)

RN 395665-71-1 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-3-acetamide, 6-(1,3-benzodioxol-5-yl)-N-[[4-(dimethylamino)phenyl]methyl]-1,2,3,4,6,7,12,12a-octahydro-1,4-dioxo-, (3S,6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 395665-72-2 CAPLUS

CN Piperazine, 1-[{(3S,6R,12aR)-6-(1,3-benzodioxol-5-yl)-1,2,3,4,6,7,12,12a-octahydro-1,4-dioxopyrazino[1',2':1,6]pyrido[3,4-b]indol-3-yl]acetyl]-4-methyl- (9CI) (CA INDEX NAME)

RN 395665-73-3 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-3-acetamide, 6-(1,3-benzodioxol-5-yl)-1,2,3,4,6,7,12,12a-octahydro-1,4-dioxo-N-[2-(1-pyrrolidinyl)ethyl]-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 395665-75-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-3-acetic acid, 6-(1,3-benzodioxol-5-yl)-1,2,3,4,6,7,12,12a-octahydro-1,4-dioxo-, heptyl ester, (3S,6R,12aR)-(9CI) (CA INDEX NAME)

RN 395665-76-6 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-3-acetic acid, 6-(1,3-benzodioxol-5-yl)-1,2,3,4,6,7,12,12a-octahydro-1,4-dioxo-, ethyl ester, (3S,6R,12aR)-(9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 395665-77-7 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-3-acetic acid, 6-(1,3-benzodioxol-5-yl)-1,2,3,4,6,7,12,12a-octahydro-1,4-dioxo-, 1-methylethyl ester, (3S,6R,12aR)- (9CI) (CA INDEX NAME)

RN 395665-78-8 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-3-acetic acid, 6-(1,3-benzodioxol-5-yl)-1,2,3,4,6,7,12,12a-octahydro-1,4-dioxo-, cyclopentyl ester, (3S,6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 395665-79-9 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-3-acetic acid, 6-(1,3-benzodioxol-5-yl)-1,2,3,4,6,7,12,12a-octahydro-1,4-dioxo-, 2,2,2-trifluoroethyl ester, (3S,6R,12aR)- (9CI) (CA INDEX NAME)

RN 395665-80-2 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-3-(3,3-dimethyl-2-oxobutyl)-2,3,6,7,12,12a-hexahydro-, (3S,6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 395665-81-3 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-3-propanoic acid, 6-(1,3-benzodioxol-5-yl)-1,2,3,4,6,7,12,12a-octahydro-1,4-dioxo-, ethyl ester, (3S,6R,12aR)- (9CI) (CA INDEX NAME)

RN 395665-91-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-3-(1H-pyrazol-1-ylmethyl)-, (3S,6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 395665-95-9 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-3-acetamide, 6-(1,3-benzodioxol-5-yl)-1,2,3,4,6,7,12,12a-octahydro-1,4-dioxo-N-[2-(1-pyrrolidinyl)ethyl]-, (3S,6R,12aR)- (9CI) (CA INDEX NAME)

RN 395665-96-0 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-3-(3-pyridinylmethyl)-, (3S,6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 395665-98-2 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2,3,3-trimethyl-, (12aR)- (9CI) (CA INDEX NAME)

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

```
L5
     ANSWER 51 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
     2002:51273 CAPLUS
ΑN
     136:96099
DN
TI
     Treatment of male sexual dysfunction
    Naylor, Alasdair Mark; Van der Graaf, Pieter Hadewijn; Wayman, Christopher
IN
     Pfizer Limited, UK; Pfizer Inc.
PA
     PCT Int. Appl., 124 pp.
SO
     CODEN: PIXXD2
DT
     Patent
     English
LА
FAN.CNT 10
                     KIND DATE
     PATENT NO.
                                         APPLICATION NO. DATE
PΙ
    WO 2002003995
                     A2
                            20020117
                                           WO 2001-IB1187
                                                            20010702
     WO 2002003995
                     A3
                            20020418
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             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
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                                          US 2001-893585
     US 2002052370
                            20020502
                                                            20010628
                      Α1
                                           EP 2001-947709
                            20030402
     EP 1296687
                       A2
                                                            20010702
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PRAI GB 2000-16684
                      Α
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                            20001215
     GB 2001-6167
                            20010313
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     GB 2001-8483
                            20010404
                       Α
    US 2000-219100P
                      Р
                            20000718
     GB 2001-1584
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                            20010122
     US 2001-274957P
                      Ρ
                            20010312
     WO 2001-IB1187
                            20010702
                      W
    MARPAT 136:96099
OS
     The present invention relates to the use of neutral endopeptidase
AΒ
     inhibitors (NEPi) and a combination of NEPi and phosphodiesterase type
     (PDE5) inhibitor for the treatment of male sexual dysfunction, in
     particular MED.
IT
     171596-29-5, IC-351
     RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL
     (Biological study); USES (Uses)
        (treatment of male sexual dysfunction using neutral endopeptidase
        inhibitors and their combination with phosphodiesterase type 5
        inhibitors and other agents in relation to inhibition of angiotensin
        converting enzyme)
     171596-29-5 CAPLUS
RN
     Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-
CN
     2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)
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ANSWER 52 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
L5
    2002:10475 CAPLUS
AN
DN
    136:85828
    Preparation of pyrazinopyridoindolediones as cyclic GMP phosphodiesterase
TТ
    inhibitors
    Orme, Mark W.; Sawyer, Jason Scott; Schultze, Lisa M.; Daugan, Alain
IN
    Claude-Marie; Gellibert, Francoise
    Lilly Icos LLC, USA
PA
    PCT Int. Appl., 81 pp.
SO
    CODEN: PIXXD2
DT
    Patent
    English
LА
FAN.CNT 1
    PATENT NO.
                     KIND DATE
                                          APPLICATION NO. DATE
                     ____
                           _____
                                          _____
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    WO 2002000656
                      A2
                           20020103
                                          WO 2001-US15935 20010515
    WO 2002000656
                      A3
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            BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
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                          20031203
                                         EP 2001-935629 20010515
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    US 2003225094
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                           20031204
                                          US 2002-297682
                                                           20021206
PRAI US 2000-213647P
                      Р
                           20000623
    WO 2001-US15935
                      W
                           20010515
    MARPAT 136:85828
OS
GT
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- * STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY AVAILABLE VIA OFFLINE PRINT *
- The pyrazinopyridoindolediones I (R = halo, C1-6-alkyl; R1 = aryl, heteroaryl, amino, R4O, R4CO, R4SO, R4SO2, C1-4-alkylene-CO2R4, C1-4-alkylenehetreroaryl, sulfamoyl, cyano, NO2, CO-C1-4-alkyleneheteroaryl, C1-4-alkylene-OR4, etc.; R2 = monocyclic arom. ring consisting of benzene, thiophene, furan, and pyridine, and an optionally substituted bicyclic ring wherein the fused ring is a 5- or 6-membered ring comprised of C and optionally heteroatoms selected from O, S, and N; R3 = H, C1-6-alkyl; R4 = H, alkyl, aryl, heteroaryl, etc.) and their salts and solvates were prepd. as cyclic GMP phosphodiesterase inhibitors. Thus, D-tryptophan Me ester hydrochloride was treated with piperonal to give the carbolinecarboxylate II, which was treated with chloroacetyl chloride followed by cyclization with hydroxylamine-HCl to give the pyrazinopyridoindoledione III. The cyclic GMP phosphodiesterase inhibitor IC50 of III 0.0075 .mu.M.
- IT 385769-78-8P 385769-80-2P 385769-82-4P 385769-84-6P 385769-86-8P 385769-88-0P 385769-90-4P 385769-94-8P 385769-98-2P 385770-00-3P 385770-01-4P 385770-03-6P

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385770-04-7P 385770-06-9P 385770-07-0P
385770-09-2P 385770-11-6P 385770-13-8P
385770-15-0P 385770-18-3P 385770-20-7P
385770-22-9P 385770-24-1P 385770-26-3P
385770-28-5P 385770-29-6P 385770-30-9P
385770-31-0P 385770-32-1P 385770-34-3P
385770-36-5P 385770-38-7P 385770-40-1P
385770-41-2P 385770-43-4P 385770-44-5P
385770-46-7P 385770-48-9P 385770-49-0P
385770-50-3P 385770-52-5P 385770-54-7P
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385770-60-5P 385770-62-7P 385770-64-9P
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385770-95-6P 385770-96-7P 385770-98-9P
385770-99-0P 385771-02-8P 385771-03-9P
385771-05-1P 385771-06-2P 385771-08-4P
385771-10-8P
RL: DMA (Drug mechanism of action); PAC (Pharmacological activity); SPN
(Synthetic preparation); THU (Therapeutic use); BIOL (Biological study);
PREP (Preparation); USES (Uses)
   (prepn. of pyrazinopyridoindolediones as cyclic GMP phosphodiesterase
   inhibitors)
385769-78-8 CAPLUS
Benzenesulfonamide, 4-[2-[(6R,12aR)-6-(1,3-benzodioxol-5-yl)-
3,4,6,7,12,12a-hexahydro-1,4-dioxopyrazino[1',2':1,6]pyrido[3,4-b]indol-
2(1H)-yl]ethyl]- (9CI) (CA INDEX NAME)
```

Absolute stereochemistry.

RN

CN

$$H_2N$$
 S
 O
 H
 R
 N
 H
 H

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RN 385769-80-2 CAPLUS
CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-hydroxy-, (6R,12aR)- (9CI) (CA INDEX NAME)
```

RN 385769-82-4 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methoxy-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 385769-84-6 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 2-amino-6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-, (6R,12aR)- (9CI) (CA INDEX NAME)

10/031463

RN 385769-86-8 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-(methylamino)-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 385769-88-0 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-phenyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 385769-90-4 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-[2-(dimethylamino)ethyl]-2,3,6,7,12,12a-hexahydro-3-methyl-, (6R,12aR)-(9CI) (CA INDEX NAME)

RN 385769-94-8 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-(2-hydroxyethyl)-, (6R,12aR)-rel-(9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 385769-98-2 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-[3-(4-methyl-1-piperazinyl)propyl]-, (6R,12aR)-(9CI) (CA INDEX NAME)

Me
$$(CH_2)_3$$
 N R N R N H

RN 385770-00-3 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-[2-(1-piperidinyl)ethyl]-, (6R,12aR)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 385770-01-4 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-[2-(diethylamino)ethyl]-2,3,6,7,12,12a-hexahydro-, (6R,12aR)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 385770-03-6 CAPLUS

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-CN 2,3,6,7,12,12a-hexahydro-2-[2-(4-morpholinyl)ethyl]-, (6R,12aR)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RN385770-04-7 CAPLUS

Pyrazino[1',2':1,6] pyrido[3,4-b] indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-1,4-dione, 6-(1,3-benzodioxol-5-yl)-1,5-ylCN2,3,6,7,12,12a-hexahydro-2-[2-(4-morpholinyl)ethyl]-, (6R,12aR)- (9CI) (CA INDEX NAME)

RN 385770-06-9 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-[3-(4-morpholinyl)propyl]-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 385770-07-0 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-2(1H)-acetic acid, 6-(1,3-benzodioxol-5-yl)-3,4,6,7,12,12a-hexahydro-1,4-dioxo-, methyl ester, (6R,12aR)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 385770-09-2 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-2(1H)-acetamide, 6-(1,3-benzodioxol-5-yl)-3,4,6,7,12,12a-hexahydro-1,4-dioxo-, (6R,12aR)-rel-(9CI) (CA INDEX NAME)

Relative stereochemistry.

$$H_2N$$
 O
 N
 R
 N
 H

RN 385770-11-6 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 2-(1-azabicyclo[2.2.2]oct-3-yl)-6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-, (6R,12aR)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 385770-13-8 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-[2-[bis(1-methylethyl)amino]ethyl]-2,3,6,7,12,12a-hexahydro-, (6R,12aR)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 385770-15-0 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-2(1H)-propanoic acid, 6-(1,3-benzodioxol-5-yl)-3,4,6,7,12,12a-hexahydro-1,4-dioxo-, ethyl ester, (6R,12aR)- (9CI) (CA INDEX NAME)

RN 385770-18-3 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-(3-methoxypropyl)-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 385770-20-7 CAPLUS

CN Acetamide, N-[2-[(6R,12aR)-6-(1,3-benzodioxol-5-yl)-3,4,6,7,12,12a-hexahydro-1,4-dioxopyrazino[1',2':1,6]pyrido[3,4-b]indol-2(1H)-yl]ethyl]-(9CI) (CA INDEX NAME)

RN 385770-22-9 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-[3-(2-oxo-1-pyrrolidinyl)propyl]-, (6R,12aR)-(9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 385770-24-1 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-2(1H)-acetamide, 6-(1,3-benzodioxol-5-yl)-3,4,6,7,12,12a-hexahydro-1,4-dioxo-N-phenyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

RN 385770-26-3 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-(2-methoxyethyl)-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 385770-28-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-2(1H)-acetamide, 6-(1,3-benzodioxol-5-yl)-3,4,6,7,12,12a-hexahydro-1,4-dioxo-N-(phenylmethyl)-, (6R,12aR)- (9CI) (CA INDEX NAME)

RN 385770-29-6 CAPLUS

CN Piperidine, 1-[[(6R,12aR)-6-(1,3-benzodioxol-5-yl)-3,4,6,7,12,12a-hexahydro-1,4-dioxopyrazino[1',2':1,6]pyrido[3,4-b]indol-2(1H)-yl]acetyl]-(9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 385770-30-9 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-[3-(1H-imidazol-1-yl)propyl]-, (6R,12aR)- (9CI) (CA INDEX NAME)

385770-31-0 CAPLUS RN

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-2(1H)-propanamide, 6-(1,3-benzodioxol-5-yl)-N-cyclohexyl-3,4,6,7,12,12a-hexahydro-1,4-dioxo-, (6R, 12aR) - (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN

385770-32-1 CAPLUS Pyrazino[1',2':1,6]pyrido[3,4-b]indole-2(1H)-butanamide, CN dioxo-, (6R,12aR)- (9CI) (CA INDEX NAME)

$$\begin{array}{c|c} Me & O & H \\ \hline N & (CH_2)_3 & R & R \\ \hline O & N & R & H \\ \hline \end{array}$$

RN 385770-34-3 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-2(1H)-butanamide, 6-(1,3-benzodioxol-5-yl)-N-cyclohexyl-3,4,6,7,12,12a-hexahydro-1,4-dioxo-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 385770-36-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-2(1H)-propanoic acid, 6-(1,3-benzodioxol-5-yl)-3,4,6,7,12,12a-hexahydro-1,4-dioxo-, (6R,12aR)-(9CI) (CA INDEX NAME)

RN 385770-38-7 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-[(tetrahydro-2-furanyl)methyl]-, (6R,12aR)-rel-(9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 385770-40-1 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-2(1H)-acetamide, 6-(1,3-benzodioxol-5-yl)-3,4,6,7,12,12a-hexahydro-1,4-dioxo-N-4-pyridinyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

385770-41-2 CAPLUS RN

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-CN 2-(3-ethoxypropyl)-2,3,6,7,12,12a-hexahydro-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN

385770-43-4 CAPLUS
Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-CN2,3,6,7,12,12a-hexahydro-2-[2-(2-hydroxyethoxy)ethyl]-, (6R,12aR)- (9CI) (CA INDEX NAME)

RN 385770-44-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-[(2R)-2-hydroxypropyl]-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 385770-46-7 CAPLUS

CN Piperazine, 1-[[(6R,12aR)-6-(1,3-benzodioxol-5-yl)-3,4,6,7,12,12a-hexahydro-1,4-dioxopyrazino[1',2':1,6]pyrido[3,4-b]indol-2(1H)-yl]acetyl]-4-phenyl- (9CI) (CA INDEX NAME)

RN 385770-48-9 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-2(1H)-acetamide, 6-(1,3-benzodioxol-5-yl)-3,4,6,7,12,12a-hexahydro-N-methyl-1,4-dioxo-N-phenyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 385770-49-0 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 2-[2-(3-azabicyclo[3.2.2]non-3-yl)ethyl]-6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-, (6R,12aR)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 385770-50-3 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 2-(1H-benzimidazol-2-ylmethyl)-6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-, (6R,12aR)-(9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 385770-52-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-[2-(4-methyl-1-piperazinyl)ethyl]-, (6R,12aR)-(9CI) (CA INDEX NAME)

385770-54-7 CAPLUS RN

Benzoic acid, 4-[[(6R,12aR)-6-(1,3-benzodioxol-5-yl)-3,4,6,7,12,12a-hexahydro-1,4-dioxopyrazino[1',2':1,6]pyrido[3,4-b]indol-2(1H)-yl]methyl]-CN (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN

385770-56-9 CAPLUS
Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-[[4-(dimethylamino)phenyl]methyl]-2,3,6,7,12,12a-hexahydro-, (6R,12aR)-CN(9CI) (CA INDEX NAME)

RN 385770-57-0 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-[[4-(dimethylamino)phenyl]methyl]-2,3,6,7,12,12a-hexahydro-3-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 385770-58-1 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-[2-[(2R,6S)-2,6-dimethyl-4-morpholinyl]ethyl]-2,3,6,7,12,12a-hexahydro-, (6S,12aS)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 385770-60-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-[2-[(2R,6S)-2,6-dimethyl-4-morpholinyl]ethyl]-2,3,6,7,12,12a-hexahydro-, (6S,12aR)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 385770-62-7 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-[2-(1H-imidazol-1-yl)ethyl]-, (6R,12aR)-rel-(9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 385770-64-9 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-[2-(5-methyl-1H-imidazol-1-yl)ethyl]-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 385770-66-1 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 2-[(4-aminophenyl)methyl]-6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-, (6R,12aR)- (9CI) (CA INDEX NAME)

$$H_2N$$
 N
 R
 N
 R

RN 385770-68-3 CAPLUS

CN Methanesulfonamide, N-[4-[[(6R,12aR)-6-(1,3-benzodioxol-5-yl)-3,4,6,7,12,12a-hexahydro-1,4-dioxopyrazino[1',2':1,6]pyrido[3,4-b]indol-2(1H)-yl]methyl]phenyl]-1,1,1-trifluoro-(9CI) (CA INDEX NAME)

Absolute stereochemistry.

$$F_3C$$
 $\stackrel{\circ}{\longrightarrow}$ $\stackrel{\circ}{\longrightarrow}$

RN 385770-70-7 CAPLUS

CN Benzenesulfonamide, 4-[[(6R,12aR)-6-(1,3-benzodioxol-5-yl)-3,4,6,7,12,12a-hexahydro-1,4-dioxopyrazino[1',2':1,6]pyrido[3,4-b]indol-2(1H)-yl]methyl]-(9CI) (CA INDEX NAME)

RN 385770-72-9 CAPLUS

CN Benzonitrile, 4-[[(6R,12aR)-6-(1,3-benzodioxol-5-yl)-3,4,6,7,12,12a-hexahydro-1,4-dioxopyrazino[1',2':1,6]pyrido[3,4-b]indol-2(1H)-yl]methyl]-(9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 385770-73-0 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-2(1H)-acetonitrile, 6-(1,3-benzodioxol-5-yl)-3,4,6,7,12,12a-hexahydro-1,4-dioxo-, (6R,12aR)-(9CI) (CA INDEX NAME)

RN 385770-75-2 CAPLUS

CN Benzoic acid, 4-[[(6R,12aR)-6-(1,3-benzodioxol-5-yl)-3,4,6,7,12,12a-hexahydro-1,4-dioxopyrazino[1',2':1,6]pyrido[3,4-b]indol-2(1H)-yl]methyl]-, methyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 385770-76-3 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-[2-(1-methyl-2-pyrrolidinyl)ethyl]-, (6R,12aR)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 385770-77-4 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-[2-(1H-imidazol-4-yl)ethyl]-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 385770-78-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-[[4-[(dimethylamino)methyl]phenyl]methyl]-2,3,6,7,12,12a-hexahydro-, (6R,12aR)- (9CI) (CA INDEX NAME)

RN 385770-79-6 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 2-[2-(4-aminophenyl)ethyl]-6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 385770-80-9 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-2(1H)-acetic acid, 6-(1,3-benzodioxol-5-yl)-3,4,6,7,12,12a-hexahydro-1,4-dioxo-, phenylmethyl ester, (6R,12aR)- (9CI) (CA INDEX NAME)

RN 385770-82-1 CAPLUS CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-2(1H)-acetic acid, 6-(1,3-benzodioxol-5-yl)-3,4,6,7,12,12a-hexahydro-1,4-dioxo-, (6R,12aR)-(9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 385770-83-2 CAPLUS CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-[3-(3,5-dimethyl-1H-pyrazol-1-yl)propyl]-2,3,6,7,12,12a-hexahydro-, (6R,12aR)- (9CI) (CA INDEX NAME)

RN 385770-85-4 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-2(1H)-propanoic acid, 6-(1,3-benzodioxol-5-yl)-3,4,6,7,12,12a-hexahydro-1,4-dioxo-, 1,1-dimethylethyl ester, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 385770-89-8 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-[2-(1H-pyrazol-1-yl)ethyl]-, (6R,12aR)- (9CI) (CA INDEX NAME)

RN 385770-91-2 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-[(3-nitrophenyl)methyl]-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 385770-92-3 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 2-[(3-aminophenyl)methyl]-6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-, (6R,12aR)- (9CI) (CA INDEX NAME)

RN 385770-93-4 CAPLUS

CN Methanesulfonamide, N-[3-[[(6R,12aR)-6-(1,3-benzodioxol-5-yl)-3,4,6,7,12,12a-hexahydro-1,4-dioxopyrazino[1',2':1,6]pyrido[3,4-b]indol-2(1H)-yl]methyl]phenyl]-1,1,1-trifluoro-(9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 385770-95-6 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-[3-(1H-pyrazol-1-yl)propyl]-, (6R,12aR)- (9CI) (CA INDEX NAME)

RN 385770-96-7 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-[[4-(phenylmethoxy)phenyl]methyl]-, (6R,12aR)-(9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 385770-98-9 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-[[4-[2-(dimethylamino)ethoxy]phenyl]methyl]-2,3,6,7,12,12a-hexahydro-, (6R,12aR)- (9CI) (CA INDEX NAME)

RN 385770-99-0 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-[2-(1H-1,2,4-triazol-1-yl)ethyl]-, (6R,12aR)-(9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 385771-02-8 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-[[3-(methylamino)-5-nitrophenyl]methyl]-, (6R,12aR)- (9CI) (CA INDEX NAME)

RN 385771-03-9 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-2(1H)-acetamide, 6-(1,3-benzodioxol-5-yl)-3,4,6,7,12,12a-hexahydro-N-(4-methyl-1-piperazinyl)-1,4-dioxo-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 385771-05-1 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-[(1-methyl-1H-benzimidazol-5-yl)methyl]-, (6R,12aR)- (9CI) (CA INDEX NAME)

RN 385771-06-2 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-2(1H)-acetic acid, 6-(1,3-benzodioxol-5-yl)-3,4,6,7,12,12a-hexahydro-1,4-dioxo-, 1,1-dimethylethyl ester, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 385771-08-4 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-2(1H)-acetic acid, 6-(1,3-benzodioxol-5-yl)-3,4,6,7,12,12a-hexahydro-1,4-dioxo-, methyl ester, (6R,12aR)- (9CI) (CA INDEX NAME)

385771-10-8 CAPLUS RN

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-2(1H)-acetic acid, 6-(1,3-benzodioxol-5-yl)-3,4,6,7,12,12a-hexahydro-1,4-dioxo-, octyl ester, (6R,12aR)- (9CI) (CA INDEX NAME) CN

Me
$$(CH_2)$$
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ANSWER 53 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
    2001:924320 CAPLUS
    136:31728
DN
    Daily treatment for erectile dysfunction using a phosphodiesterase 5
TI
     (PDE5) inhibitor
    Whitaker, John S.; Saenz de Tejada, Inigo; Ferguson, Kenneth M.
ΙN
PA
    U.S. Pat. Appl. Publ., 12 pp., Cont.-in-part of U.S. Ser. No. 558,911.
SO
    CODEN: USXXCO
    Patent
DT
    English
LA
FAN.CNT 3
                   KIND DATE
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     EP 1173181
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            IE, SI, LT, LV, FI, RO
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    NZ 514882
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    HR 2001000778 A1 20021231

NO 2001005275 A 20011206

US 2003100478 A1 20030529

US 2003144296 A1 20030731
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                                         HR 2001-778
                                                         20011029
                                         NO 2001-5275
                                         US 2002-198903 20020719
                                          US 2003-341664
                                                           20030114
PRAI US 1999-132036P P 19990430
                     A2 20000426
     US 2000-558911
                     W
     WO 2000-US11129
                           20000426
                     A3
                           20010413
     US 2001-834442
     The invention provides phosphodiesterase (PDE) enzyme inhibitors and to
AB
     their use in pharmaceutical articles of manuf. In particular, the
     invention provides potent inhibitors of cyclic guanosine
     3',5'-monophosphate specific phosphodiesterase type 5 (PDE5) that, when
     incorporated into a pharmaceutical product at about 1-10 mg unit dosage,
     are useful for the treatment of sexual dysfunction by daily administration
     of the PDE5 inhibitor. The articles of manuf. described are characterized
     by PDE5 inhibition, and accordingly, provide a benefit in therapeutic
     areas where inhibition of PDE5 is desired, esp. erectile dysfunction, with
     minimization or elimination of adverse side effects resulting from
     inhibition of other phosphodiesterase enzymes and with an improvement of
     vascular conditioning.
     171596-29-5 171596-40-0
IT
     RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL
     (Biological study); USES (Uses)
        (phosphodiesterase 5 inhibitor for daily treatment for erectile
        dysfunction)
     171596-29-5 CAPLUS
RN
     Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-
CN
     2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)
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Absolute stereochemistry. Rotation (+).

RN 171596-40-0 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2,3-dimethyl-, (3S,6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

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ANSWER 54 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
L5
     2001:916407 CAPLUS
AN
     136:53755
DN
     Synthesis of nitrosated and nitrosylated (hetero)cyclic phosphodiesterase
ΤI
     inhibitors used in treatment of sexual dysfunction
     Garvey, David S.; Saenz de Tejada, Inigo; Earl, Richard A.; Khanapure,
TN
     Subhash P.
     Nitromed, Inc., USA
PA
     U.S., 117 pp., Cont.-in-part of U.S. 5,958,926.
SO
     CODEN: USXXAM
     Patent
DT
     English
LΑ
FAN.CNT 3
     PATENT NO.
                     KIND DATE
                                           APPLICATION NO.
                                                           DATE
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                                                            19990901
                                           US 1999-387727
                            20011218
PΙ
     US 6331543
                      В1
                                           US 1996-740764
                                                            19961101
                            19990223
     US 5874437
                      Α
                                           WO 1997-US19870 19971031
                            19980514
     WO 9819672
                      A1
        W: AU, CA, JP, US
        RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
                                                            19980901
                                           US 1998-145142
     US 5958926
                      Α
                            19990928
                                                            20010830
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                                           US 2001-941691
     US 2002019405
                      Α1
                            20021008
     US 6462044
                       В2
                            20030130
                                           US 2002-216886
                                                            20020813
     US 2003023087
                      A1
PRAI US 1996-740764
                       A2
                            19961101
     WO 1997-US19870
                      A2
                            19971031
     US 1998-145142
                      A2
                            19980901
     US 1999-387727
                       A1
                            19990901
                       A3
                            20010830
     US 2001-941691
     MARPAT 136:53755
OS
GI
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- * STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY AVAILABLE VIA OFFLINE PRINT *
- Compds. I-V, derivs. thereof, and certain substituted Ph and phthalzaine AΒ derivs. were claimed [D2 = H, alkyl, D; D = NO, NO2, alkyl, acyl, phosphoryl, silyl, etc.; A1-3 comprise the other subunits of a 5- or 6-membered monocyclic arom. ring; R8 = H, (halo)alkyl; p = 1-10; R24 = H, cyclohexyl, piperidinyl, etc., with the proviso that at least one of A1-3, J, or R24 contains T-Q or D; T = bond, O, S(O), amino; Q = NO, NO2; D1 = Dor H; R37 = (hetero)aryl; R38 = H, halo, alkyl; G1 = alkyl, alkenyl or is part of a ring fused to the piperidine moiety of III; G4 = O, S; R40 = H, alkyl, haloalkyl, halo, etc.; R41 = alkyl, hydroxyalkyl, alkylcarboxy, etc.; R42 = aryl, alkylaryl, alkyloxyaryl; T1 = alkyl, oxyalkyl, thioalkyl, aminoalkyl]. Two synthetic examples were provided. E.g., the S-nitroso deriv. of the 3-mercapto-3-methylbutyric acid ester of dipyridamole (VI) was prepd. in 4 steps from dipyridamole in 3.5% overall yield. VI at doses of 10 and 30 .mu.M was more efficacious in relaxing phenylephrine-induced tissue contraction than was the known phosphodiesterase inhibitor, dipyridamole. The present invention describes novel (nitrosated/nitrosylated) phosphodiesterase inhibitors, and compns. contg. at least one (nitrosated/nitrosylated) phosphodiesterase inhibitor, and, optionally, one or more compds. that donate, transfer or release NO, elevate endogenous levels of endothelium-derived relaxing factor, stimulate endogenous synthesis of NO,

or is a substrate for nitric oxide synthase and/or one or more vasoactive agents. The present invention also provides methods for treating or preventing sexual dysfunctions in males and females, for enhancing sexual responses in males and females, and for treating or preventing diseases induced by the increased metab. of cGMP, such as hypertension, pulmonary hypertension, etc.

IT 171596-29-5D, ICOS 351, nitroso derivs.

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses) (synthesis of nitrosated and nitrosylated (hetero)cyclic phosphodiesterase inhibitors used in treatment of sexual dysfunction)

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

RE.CNT 86 THERE ARE 86 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

```
ANSWER 55 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
L5
     2001:904172 CAPLUS
AN
     136:20091
DN
     Preparation of tetracyclic diketopiperazine compounds as PDE5 inhibitor
ΤI
     Orme, Mark W.; Daugan, Alain Claude-Marie; Bombrun, Agnes
IN
PA
     Lilly Icos Llc, USA
     PCT Int. Appl., 55 pp.
SO
     CODEN: PIXXD2
     Patent
DT
     English
LΑ
FAN.CNT 1
     PATENT NO.
                                           APPLICATION NO.
                                                            DATE
                      KIND
                            DATE
                                           _____
PI
     WO 2001094347
                       A1
                            20011213
                                           WO 2001-US15937 20010515
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             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT,
             RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US,
             UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
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             BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
                           20030312
                                           EP 2001-945961 20010515
     EP 1289990
                       A1
            AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
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                                           US 2002-296099
                                                            20021122
     US 2003153575
                       Α1
                            20030814
                            20000608
PRAI US 2000-210324P
                       Р
     WO 2001-US15937
                            20010515
                       W
     MARPAT 136:20091
OS
GΙ
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Ι

The title compds. I [R1 = C1-6 alkyl; R2 = H, Me] were prepd. and use of the compds. as PDE5 inhibitors was described. E.g., (6R,12aR)-6-(3,4-dihydroxyphenyl)-2-methyl-2,3,6,7,12,12a-hexahydropyrazino[1',2':1,6]pyrid o[3,4-b]indole-1,4-dione was prepd. I may be used for male erectile dysfunction or female arousal disorder.

IT 378788-17-1P

RL: IMF (Industrial manufacture); PAC (Pharmacological activity); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)

(prepn. of tetracyclic diketopiperazine compds. as PDE5 inhibitor)

RN 378788-17-1 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

```
ANSWER 56 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
    2001:904168 CAPLUS
AN
    136:20090
DN
    Preparation of cyclic guanosine monophosphate specific phosphodiesterase
ΤI
    inhibiting heterocyclylpyrazinopyridoindolediones for treatment of
    cardiovascular disorders and erectile disfunction
    Orme, Mark W.; Sawyer, Jason Scott; Daugan, Alain Claud-Marie
IN
    Lilly Icos LLC, USA
PΑ
    PCT Int. Appl., 103 pp.
SO
    CODEN: PIXXD2
    Patent
DT
    English
LΑ
FAN.CNT 1
                     KIND DATE
    PATENT NO.
                                          APPLICATION NO. DATE
                           _____
                                          _____
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                                          WO 2001-US15936 20010515
                           20011213
PI
    WO 2001094345
                    A2
                     Α3
                           20020718
    WO 2001094345
        W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
            CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
            GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
            LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT,
            RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US,
            UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
            DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
            BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
                          20030312
                                          EP 2001-945960 20010515
                      A2
            AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
                                          US 2002-297245
                                                          20021203
    US 2003225092
                      A1
                           20031204
PRAI US 2000-210137P
                      Ρ
                           20000607
    WO 2001-US15936
                           20010515
                      W
    MARPAT 136:20090
OS
GT
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- * STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY AVAILABLE VIA OFFLINE PRINT *
- The pyrazinopyridoindolediones I [R1 = H, alkyl, alkenyl, alkynyl, haloalkyl, cycloalkyl, heterocycloalkyl, etc; R2 = (un)substituted Ph, thienyl, furanyl, pyridyl, bicyclic ring optionally contg. O, S, N hetero atoms, e.g. benzodioxolyl; R3 = H, alkyl; R4 = aryl, heteroaryl, cycloalkyl, acyl, acyloxy, alkoxycarbonyl, aminoalkyl, carbamoyl, alkoxy, amino, acylamino, nitro, cyano, alkylthio etc.; R5 = H, halo, alkyl; R4R5 = 5-, 6-, 7-membered ring optionally contg. 0, S, N atoms; m = 1, 2, 3and their diastereoisomers and pharmaceutically acceptable salts were prepd., possessed cGMP specific phosphodiesterase inhibiting activity, and were useful in the treatment of various cardiovascular disorders, erectile disfunction, and female sexual arousal disorder. Thus, the Me ester of 5-hydroxytryptophan condensed with piperonal in trifluoroacetic acid/CH2Cl2 to give the [(methylenedioxy)phenyl]pyridoindole II which was acylated by ClCH2COC1 and then cyclized with MeNH2 to give the [(methylenedioxy)phenyl]hexahydropyrazinopyridoindoledione III that inhibited cGMP specific phosphodiesterase in vitro with an IC50 of 48.1
- IT 379234-97-6P

RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses) (prepn. of (benzodioxolyl)pyrazinopyridoindolediones with cGMP-specific phosphodiesterase inhibiting activity useful in treating cardiovascular, erectile, and female sexual arousal disorders)

RN 379234-97-6 CAPLUS
CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-9-carboxylic acid, 6-(1,3-benzodioxol-5-yl)-1,2,3,4,6,7,12,12a-octahydro-2-methyl-1,4-dioxo-, methyl ester, (6R,12aR)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

IT 379234-74-9P 379234-78-3P 379234-82-9P 379234-88-5P 379234-98-7P 379235-06-0P 379235-11-7P 379235-12-8P 379235-13-9P 379235-15-1P 379235-16-2P 379235-17-3P RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (prepn. of (benzodioxolyl)pyrazinopyridoindolediones with cGMP-specific phosphodiesterase inhibiting activity useful in treating cardiovascular, erectile, and female sexual arousal disorders) RN 379234-74-9 CAPLUS Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-CN 2,3,6,7,12,12a-hexahydro-10-hydroxy-2-methyl-, (6R,12aR)-rel- (9CI) (CA INDEX NAME)

RN 379234-78-3 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-10-methoxy-2-methyl-, (6R,12aR)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 379234-82-9 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-10-methoxy-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

RN 379234-88-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-9-phenyl-, (6R,12aR)-rel-(9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 379234-98-7 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-9-carboxylic acid, 6-(1,3-benzodioxol-5-yl)-1,2,3,4,6,7,12,12a-octahydro-2-methyl-1,4-dioxo-, (6R,12aS)-rel- (9CI) (CA INDEX NAME)

RN 379235-06-0 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-9-carbonitrile, 6-(1,3-benzodioxol-5-yl)-1,2,3,4,6,7,12,12a-octahydro-2-methyl-1,4-dioxo-, (6R,12aR)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 379235-11-7 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-8-(phenylmethoxy)-, (6R,12aR)-rel-(9CI) (CA INDEX NAME)

RN 379235-12-8 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-9-hydroxy-2-methyl-, (6R,12aR)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 379235-13-9 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-9-(phenylmethoxy)-, (6R,12aR)-rel-(9CI) (CA INDEX NAME)

RN 379235-15-1 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 9-(aminomethyl)-6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 379235-16-2 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-10-phenyl-, (6R,12aR)-rel- (9CI) (CA INDEX NAME)

RN 379235-17-3 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-8-hydroxy-2-methyl-, (6R,12aR)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

IT 379234-87-4P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(prepn. of (benzodioxolyl)pyrazinopyridoindolediones with cGMP-specific phosphodiesterase inhibiting activity useful in treating cardiovascular, erectile, and female sexual arousal disorders)

RN 379234-87-4 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-9-bromo-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)-rel- (9CI) (CA INDEX NAME)

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ANSWER 57 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
     2001:798055 CAPLUS
AN
     135:339295
DN
     Daily treatment for erectile dysfunction using a phosphodiesterase 5
TI
     (PDE5) inhibitor
     Whitaker, John S.; Saenz de Tejada, Inigo; Ferguson, Kenneth M.
IN
     Lilly Icos LLC, USA
PA
     PCT Int. Appl., 48 pp.
SO
     CODEN: PIXXD2
     Patent
DT
     English
LA
FAN.CNT 3
     PATENT NO.
                      KIND
                            DATE
                                           APPLICATION NO. DATE
                                           WO 2001-US12512 20010413
     WO 2001080860
                            20011101
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PΤ
                      A3
                            20020606
     WO 2001080860
            AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM,
             HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS,
             LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO,
             RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ,
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         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
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             BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
     US 6451807
                                          US 2000-558911
                                                            20000426
                       В1
                            20020917
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                       A2
                            20030122
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     EP 1276481
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     JP 2003531174
                       T2
                            20031021
     NO 2002005138
                            20021216
                                           NO 2002-5138
                                                             20021025
                       Α
PRAI US 2000-558911
                       Α
                            20000426
     US 1999-132036P
                       Ρ
                            19990430
                      W
                            20010413
     WO 2001-US12512
     The invention relates to phosphodiesterase (PDE) enzyme inhibitors and to
AΒ
     their use in pharmaceutical articles of manuf. In particular, the
     invention relates to potent inhibitors of cyclic guanosine
     3',5'-monophosphate-specific phosphodiesterase type 5 (PDE5) that, when
     incorporated into a pharmaceutical product at about 1 to about 10 mg unit
     dosage, are useful for the treatment of sexual dysfunction by daily
     administration of the PDE5 inhibitor. The articles of manuf. are
     characterized by PDE5 inhibition, and accordingly provide a benefit in
     therapeutic areas where inhibition of PDE5 is desired, esp. erectile
     dysfunction, with minimization or elimination of adverse side effects
     resulting from inhibition of other phosphodiesterase enzymes and with an
     improvement of vascular conditioning.
IT
     171596-29-5 171596-40-0
     RL: BAC (Biological activity or effector, except adverse); BSU (Biological
     study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES
        (phosphodiesterase 5 inhibitor for daily treatment for sexual
        dysfunction)
RN
     171596-29-5 CAPLUS
     Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-
CN
     2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)
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RN 171596-40-0 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2,3-dimethyl-, (3S,6R,12aR)- (9CI) (CA INDEX NAME)

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ANSWER 58 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
L5
     2001:713326 CAPLUS
AN
     135:272990
DN
     Preparation of piperazinylcarbonylaminomethylcarbonylpiperidines as
ΤI
     melanocortin-4 receptor agonists
     Palucki, Brenda L.; Barakat, Khaled J.; Guo, Liangqin; Lai, Yingjie;
IN
     Nargund, Ravi P.; Park, Min K.; Pollard, Patrick G.; Sebhat, Iyassu K.;
     Ye, Zhixiong
     Merck & Co., Inc., USA
PΑ
     PCT Int. Appl., 220 pp.
SO
     CODEN: PIXXD2
DT
     Patent
     English
LА
FAN.CNT 1
                                           APPLICATION NO. DATE
                      KIND DATE
     PATENT NO.
                                           WO 2001-US8935
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                            20010927
                      A1
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             HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT,
             LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,
             SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN,
             YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
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             BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
     US 2002019523
                       A1
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                                           US 2001-812965
                                                             20010320
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     EP 1268449
                       Α1
                            20030102
                                           EP 2001-922501
             AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
     JP 2003528088
                       T2
                            20030924
                                           JP 2001-568918
                                                             20010320
PRAI US 2000-191442P
                       Ρ
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     US 2000-242265P
                       Ρ
                            20001020
     WO 2001-US8935
                            20010320
                       W
     MARPAT 135:272990
OS
GΙ
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$$\begin{array}{c|c} X & & & \\ X & & & \\ Y & & \\ Y & & & \\ Y & &$$

AB Title compds. [I; Q = (substituted) (fused) piperazinyl, morpholinyl, thiomorpholinyl; R1 = H, alkyl, (substituted) cycloalkyl(alkyl), aryl(alkyl), heteroaryl(alkyl), etc.; X = (substituted) alkyl, cycloalkyl(alkyl), aryl(alkyl), heteroaryl(alkyl), heterocyclyl(alkyl), cyano(alkyl), aminosulfonyl(alkyl), etc.; Y = H, alkyl, cycloalkyl(alkyl), (substituted) aryl(alkyl), heterocyclyl(alkyl), heteroaryl(alkyl)], were prepd. as melanocortin-4 receptor (MC-4R) agonists. Thus, capsule formulations contg. title compd. (II) were prepd. Representative I activated MC-4R with IC50<1 .mu.M. I are claimed for the treatment of

obesity, diabetes, and sexual dysfunction including erectile dysfunction and female sexual dysfunction.

IT **171596-29-5**, IC-351

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses) (combination therapy; prepn. of piperazinylcarbonylaminomethylcarbonylp iperidines as melanocortin-4 receptor agonists)

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 59 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN

AN 2001:559496 CAPLUS

DN 135:117266

TI Treatment of sexual function disorders with phosphodiesterase 4 inhibitors as monotherapy or in combination with other phosphodiesterase inhibitors or adenylate cyclase activators

PA Stief, Christian, Germany

SO Ger. Offen., 4 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN. CNT 1

r AIV.	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
ΡI	DE 10004289	A1	20010802	DE 2000-10004289	20000201	
PRAI	DE 2000-10004289		20000201	r		

AB The invention provides a medicament contg. a phosphodiesterase 4 inhibitor as monotherapy or in combination with other phosphodiesterase inhibitors or adenylate cyclase activators for the treatment of s sexual function disorders.

IT 171596-29-5, IC 351

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(phosphodiesterase 4 inhibitors as monotherapy or in combination with other phosphodiesterase inhibitors or adenylate cyclase activators for treatment of sexual function disorders)

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 60 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN

AN 2001:541505 CAPLUS

DN 135:132460

TI Treatment of sexual function disorders with guanylate cyclase activators, optionally in combination with phosphodiesterase inhibitors

IN Stief, Christian; Magerl, Hans-Jurgen; Kuthe, Andrea; Uckert, Stefan; Becker, Armin; Farssmann, Wolf Georg; Jones, Udo

PA Germany

SO Ger. Offen., 6 pp. CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO. I	DATE	
ΡI	DE 10002200	A1	20010726	DE 2000-10002200 2	20000119	
PRAT	DE 2000-10002200		20000119			

AB Medicaments contg. activators of guanylate cyclase and their variants, individually or in combination with phosphodiesterase inhibitors, are provided for the treatment of sexual function disorders. e.g. erectile dysfunction.

IT **171596-29-5**, IC 351

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(guanylate cyclase activators, optionally in combination with phosphodiesterase inhibitors, for treatment of sexual function disorders)

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

L5 ANSWER 61 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN

AN 2001:338071 CAPLUS

DN 134:336223

TI Treatment of pulmonary hypertension with sildenafil or other phosphodiesterase V inhibitor

IN Butrous, Ghazwan Saleem; Lukas, Timothy; Machin, Ian

PA Pfizer Limited, UK; Pfizer Inc.

SO Eur. Pat. Appl., 16 pp. CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

T. WIA * C	>1A T																	
	PA'	TENT	NO.		KIN	ND.	DATE			AP	PLIC	CATIO	ои ис).	DATE			
					-													
ΡI	EP	1097	7711		Αź	2	2001	0509		EP	200	00-30	09212	2	20001	101		
	ΕP	1097	7711		A3	3	2001	0801										
		R:	AT,	BE,	CH,	DE,	DK,	ES,	FR,	GB,	GR,	IT,	LI,	LU,	NL,	SE,	MC,	PT,
			IE,	SI,	LT,	LV,	FI,	RO										
	zA	2000	00061	65	Α		2002	0430		$\mathbf{Z}\mathbf{A}$	200	00-6	165		20001	1031		
	JP	2001	17218	82	Αź	2	2001	0626		JP	200	00-3	35765	5	20001	102		
PRAI	GB	1999	9-259	70	Α		1999	1102										
	GB	2000	0-323	5	Α		2000	0211										
					٠,			1		r			_ 7 2					

AB This invention relates to the use of certain cyclic guanosine 3',5'-monophosphate phosphodiesterase type 5 inhibitors, including in particular the compd. sildenafil, for the treatment of pulmonary hypertension.

IT 171596-29-5

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(sildenafil or other phosphodiesterase V inhibitor for treatment of pulmonary hypertension)

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

L5 ANSWER 62 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN

AN 2001:258390 CAPLUS

DN 135:189567

TI IC-351: Treatment of erectile dysfunction treatment of female sexual dysfunction phosphodiesterase 5 inhibitor

AU Sorbera, L. A.; Martin, L.; Leeson, P. A.; Castaner, J.

CS Prous Science, Barcelona, 08080, Spain

SO Drugs of the Future (2001), 26(1), 15-19 CODEN: DRFUD4; ISSN: 0377-8282

PB Prous Science

DT Journal; General Review

LA English

AB A review with 20 refs. Significantly more patients (86 %) given IC-351 reported enhanced erections as compared to placebo and a significant change in the patient's median rating was obsd. with IC-351 treatment as compared to placebo. IC-351 (ClalisTM) continues to undergo phase III trials as a treatment for male erectile dysfunction and phase II trials as a treatment for female sexual dysfunction.

IT 171596-29-5, IC 351

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(IC-351 in treatment of erectile dysfunction and treatment of female sexual dysfunction in humans)

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

```
ANSWER 63 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
L5
     2001:100983 CAPLUS
AN
     134:152655
DN
     Pharmaceutical compositions containing .beta.-carboline drugs
ΤI
     Anderson, Neil R.; Hartauer, Kerry J.; Kral, Martha A.; Stephenson,
     Gregory A.
     Lilly Icos Llc, USA
PA
                                             APPS
     PCT Int. Appl., 42 pp.
SO
     CODEN: PIXXD2
DT
     Patent
     English
LΑ
FAN.CNT 1
                                                            DATE
     PATENT NO.
                      KIND
                            DATE
                                           APPLICATION NO.
                                           WO 2000-US20981 20000801
     WO 2001008688
                            20010208
PΙ
                      A2
                            20010816
     WO 2001008688
                      A3
            AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,
             HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,
             LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,
             SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN,
             YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
             DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ,
             CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
                                           BR 2000-12901
                                                             20000801
     BR 2000012901
                       Α
                            20020416
                                                             20000801
                       A2
                            20020502
                                           EP 2000-952371
     EP 1200092
             AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO, MK, CY, AL
                                                             20000801
                            20030212
                                           JP 2001-513418
     JP 2003505510
                       T2
                                           NZ 2000-516613
                                                             20000801
     NZ 516613
                       Α
                            20030829
     ZA 2002000825
                            20030207
                                           ZA 2002-825
                                                             20020130
                       Α
                                           NO 2002-531
                                                             20020201
     NO 2002000531
                       Α
                            20020403
PRAI US 1999-147048P
                       Ρ
                            19990803
                       W
                            20000801
     WO 2000-US20981
     Pharmaceutical compns. contq. .beta.-carboline drugs and pharmaceutically
AB
     acceptable salts and solvates thereof, wherein the drug is in free
     particulate form, is disclosed. A tablet contained a .beta.-carboline
     drug 10.00, lactose monohydrate 153.80, spray dried lactose monohydrate
     25.00, hydroxypropyl cellulose 4.00, croscarmellose sodium 16.00,
     hydroxypropyl cellulose 1.75, sodium lauryl sulfate 0.70, microcryst.
     cellulose 37.50, and magnesium stearate 1.25 mg. The improvement in
     bioavailability of the drug was demonstrated in humans.
IT
     171596-29-5
     RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
        (pharmaceutical compns. contg. .beta.-carboline drugs)
RN
     171596-29-5 CAPLUS
     Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-
CN
     2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)
```

```
ANSWER 64 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
L5
     2001:100982 CAPLUS
AN
     134:152654
DN
     .beta.-Carboline pharmaceutical compositions
TI
     Anderson, Neil R.; Gullapalli, Rampurna P.
IN
     Lilly Icos Llc, USA
PA
     PCT Int. Appl., 31 pp.
SO
     CODEN: PIXXD2
     Patent
DT
     English
LA
FAN.CNT 2
     PATENT NO.
                       KIND
                             DATE
                                            APPLICATION NO.
                                                              DATE
                                             ______
                                            WO 2000-US11136 20000426
     WO 2001008687
                             20010208
                       A1
PI
         W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR,
             CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU,
             LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE,
             SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA,
             ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE,
             DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF,
             CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
                             20020502
                                           EP 2000-926371
                                                              20000426
     EP 1200091
                       A1
             AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO, MK, CY, AL
                                             ZA 2002-823
                                                               20020130
     ZA 2002000823
                       Α
                             20030204
PRAI US 1999-146924P
                        Ρ
                             19990803
     WO 2000-US11136
                        W
                             20000426
     .beta.-Carboline soft capsules contains a soln. or suspension of a PDE5
AB
     inhibitor, and are useful for treating sexual dysfunction. Thus, a
     formulation contained a .beta.-carboline 25.0, Capmul MCM 177.5, Gelucire
     44/14 177.5, and propylene glycol 20.0 mg/capsule. In the phys. study of
     the above capsule formulation, no sedimentation was obsd. after storage at
     4.degree. for 120 days.
IT
     171596-29-5
     RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
         (.beta.-carboline pharmaceutical compns.)
     171596-29-5 CAPLUS
RN
     Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-
CN
     2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)
```

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

```
ANSWER 65 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
L5
    2001:100981 CAPLUS
ΑN
    134:152653
DN
     .beta.-Carboline pharmaceutical compositions containing cellulose
ΤI
    Oren, Peter L.; Anderson, Neil R.; Kral, Martha A.
ΙN
PΑ
    Lilly Icos Llc, USA
    PCT Int. Appl., 38 pp.
SO
    CODEN: PIXXD2
DΤ
    Patent
    English
LА
FAN.CNT 2
                                         APPLICATION NO. DATE
    PATENT NO.
                     KIND DATE
                            20010208
                                          WO 2000-US11130 20000426
PI
    WO 2001008686
                      A1
        W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR,
            CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU,
             ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU,
            LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE,
             SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA,
             ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE,
             DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF,
             CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
                                                            20000426
    BR 2000012863
                            20020416
                                           BR 2000-12863
                       Α
                            20020502
                                           EP 2000-926368
                                                            20000426
    EP 1200090
                       A1
            AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO, MK, CY, AL
                                           JP 2001-513416
                                                            20000426
     JP 2003505509
                      T2
                           20030212
    NZ 516616
                            20030725
                                           NZ 2000-516616
                                                            20000426
                       Α
                            20030204
                                           ZA 2002-823
                                                            20020130
    ZA 2002000823
                       Α
                                           NO 2002-532
    NO 2002000532
                       Α
                            20020326
                                                            20020201
PRAI US 1999-146924P
                            19990803
                       Р
    WO 2000-US11130
                      W
                            20000426
     .beta.-Carboline formulations contain a c-GMP phosphodiesterase inhibitor,
AΒ
     a water-sol. diluent, a lubricant, a hydrophilic binder, a disintegrant,
    and optional microcryst. cellulose and/or a wetting agent, are useful for
     treating sexual dysfunction. Thus, a tablet formulation contained a
     .beta.-carboline 5.00, lactose monohydrate 109.655, lactose monohydrate
     (spray dried) 17.50, Hydroxypropyl cellulose 4.025, croscarmellose sodium
     6.30, SLS 0.49, microcryst. cellulose (granular-102) 26.25, croscarmellose
     sodium 4.90, and Mg stearate 0.88 mg/tablet.
IT
     171596-29-5
     RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
        (.beta.-carboline pharmaceutical compns. contg. cellulose)
     171596-29-5 CAPLUS
RN
     Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-
CN
     2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)
```

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

ANSWER 66 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN

2001:28490 CAPLUS AN

134:95523 DN

Drugs for the increase of the cAMP levels TI

Stief, Christian G.; Ueckert, Stefan; Becker, Armin; Jonas, Udo; Forssmann, Wolf-Georg

PΑ Germany

Ger. Offen., 6 pp. SO CODEN: GWXXBX

Patent DT

German LA

FAN.CNT 1

PΙ

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
_	DE 19931206	A1	20010111	DE 1999-19931206	19990707
AΙ	DE 1999-19931206		19990707		

PRAI DE 1999-19931206

The invention concerns drugs for the increase of the cAMP levels and/or for the inhibition of the cAMP hydrolysis in smooth muscle tissues and their use for the treatment of diseases. Compds. such as sildenafil increased the cAMP levels in smooth muscle tissues.

IT **171596-29-5**, IC 351

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(drugs for increase of cAMP levels)

171596-29-5 CAPLUS RN

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-CN2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

```
ANSWER 67 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
     2000:790302 CAPLUS
AN
     133:329631
DN
     Treatment of female arousal disorder with a type V cGMP phosphodiesterase
TI
     Allemeier, Lora L.; Brashear, Diane L.; Ferguson, Kenneth M.; Pullman,
IN
     William E.
     Lilly Icos LLC, USA
PΑ
     PCT Int. Appl., 25 pp.
SO
     CODEN: PIXXD2
     Patent
DT
     English
LΑ
FAN.CNT 1
                                            APPLICATION NO. DATE
                      KIND DATE
     PATENT NO.
                                            _____
                                                              _____
                      A1
                                           WO 2000-US11128 20000426
                            20001109
     WO 2000066114
PI
         W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR,
             CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU,
             LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE,
             SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA,
             ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE,
             DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF,
             CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
                                                              20000426
                                           EP 2000-928382
                           20020123
     EP 1173167
                       A1
            AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO
                                            JP 2000-614999
                                                              20000426
     JP 2002543128
                       Т2
                             20021217
                                            US 2001-31321
                                                              20011019
                             20030902
     US 6613768
                        В1
PRAI US 1999-132129P
                             19990430
                        Ρ
     WO 2000-US11128
                       W
                             20000426
     A method of treating female arousal disorder in a female patient is
AB
     disclosed. The method includes orally administering an agent that
     inhibits cyclic guanosine 3',5'-monophosphate-specific phosphodiesterase
     type 5 to the female patient.
     171596-29-5 171596-40-0 304683-09-8
IT
     304683-11-2
     RL: BAC (Biological activity or effector, except adverse); BSU (Biological
     study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES
         (cGMP phosphodiesterase type V inhibitor for treatment of female
        arousal disorder)
     171596-29-5 CAPLUS
RN
     Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-
CN
     2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)
```

RN 171596-40-0 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2,3-dimethyl-, (3S,6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

RN 304683-09-8 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl- (9CI) (CA INDEX NAME)

RN 304683-11-2 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2,3-dimethyl- (9CI) (CA INDEX NAME)

RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

```
ANSWER 68 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
L5
     2000:785898 CAPLUS
AN
     133:329627
DN
     Tetracyclic cGMP-specific phosphodiesterase inhibitors and their use in
TI
     disease treatment
     Daugan, Alain Claude Marie; Gellibert, Francoise
IN
     Icos Corp., USA
PA
     U.S., 30 pp., Cont.-in-part of PCT 9519978.
SO
     CODEN: USXXAM
DT
     Patent
     English
LA
FAN.CNT 4
                                            APPLICATION NO.
                                                               DATE
                             DATE
     PATENT NO.
                      KIND
                                             US 1998-154051
                                                               19980916
                             20001107
     US 6143746
                       Α
PΙ
                             19950727
                                            WO 1995-EP183
                                                               19950119
     WO 9519978
                       A1
            AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI,
             GB, GE, HU, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SI, SK, TJ, TT,
             UA, US
         RW: KE, MW, SD, SZ, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU,
             MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN,
             TD, TG
                                                               19960711
     WO 9703675
                             19970206
                                             WO 1996-EP3024
                        A1
             AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE,
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A compd. of formula I (R0 = H, halogen, C1-6 alkyl; R1 = H, C1-6 alkyl, AB C2-6 alkenyl, C2-6 alkynyl, halo-C1-6 alkyl, C3-8 cycloalkyl, C3-8 cycloalkyl-C1-3 alkyl, aryl-C1-3 alkyl, heteroaryl-C1-3 alkyl; R2 = (substituted) monocyclic arom. ring selected from benzene, thiophene, furan, and pyridine, or (substituted) bicyclic ring (a) attached to the rest of the mol. via one of the benzene ring carbon atoms, and wherein the fused ring is a 5- or 6-membered ring which may be satd. or partially or fully unsatd., and comprises carbon atoms and optionally one or two heteroatoms selected from oxygen, sulfur, and nitrogen; R3 = H, C1-3alkyl, or R1 and R3 together = 3- or 4-membered alkyl or alkenyl chain) and salts and solvates thereof is disclosed. Compd. I is a potent and selective inhibitor of cyclic guanosine 3',5'-monophosphate-specific phosphodiesterase, having a utility in a variety of therapeutic areas where such inhibition is beneficial, including the treatment of cardiovascular disorders and erectile dysfunction. Thus, many I compds. were synthesized and tested in vitro as inhibitors of cGMP phosphodiesterase. Cis-2,3,6,7,12,12a-hexahydro-2-(4-pyridylmethyl)-6-(3,4-methylenedioxyphenyl)pyrazino[2',1':6,1]pyrido[3,4-b]indole-1,4-dione showed IC50 of 10 nM.

171488-01-0P 171488-03-2P 171488-04-3P 171488-06-5P 171488-07-6P 171488-08-7P 171488-09-8P 171488-10-1P 171488-11-2P 171488-12-3P 171488-13-4P 171488-14-5P 171488-15-6P 171488-16-7P 171488-17-8P 171488-18-9P 171488-19-0P 171488-20-3P 171488-21-4P 171488-22-5P 171488-76-9P 171488-91-8P 171488-92-9P 171488-91-8P 171488-92-9P 171488-94-1P 171488-95-2P 171489-02-4P 171596-27-3P 171596-28-4P 171596-32-0P 171596-36-4P 171596-40-0P 187935-15-5P 303984-32-9P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(tetracyclic cyclic GMP-specific phosphodiesterase inhibitors and their use in disease treatment)

RN 171488-01-0 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aS)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 171488-03-2 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 171488-04-3 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-, (6R,12aS)-rel- (9CI) (CA INDEX NAME)

RN 171488-06-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-10-fluoro-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aS)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 171488-07-6 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-[2-(2-pyridinyl)ethyl]-, (6R,12aS)-rel-(9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 171488-08-7 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-(2-pyridinylmethyl)-, (6R,12aS)-rel- (9CI) (CA INDEX NAME)

RN 171488-09-8 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-(3-pyridinylmethyl)-, (6R,12aS)-rel-(9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 171488-10-1 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-(4-pyridinylmethyl)-, (6R,12aS)-rel-(9CI) (CA INDEX NAME)

RN 171488-11-2 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-ethyl-2,3,6,7,12,12a-hexahydro-, (6R,12aS)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 171488-12-3 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-(2,2,2-trifluoroethyl)-, (6R,12aS)-rel-(9CI) (CA INDEX NAME)

171488-13-4 CAPLUS

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-CN 2,3,6,7,12,12a-hexahydro-2-propyl-, (6R,12aS)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

171488-14-5 CAPLUS RN

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-CN 2,3,6,7,12,12a-hexahydro-2-(1-methylethyl)-, (6R,12aS)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 171488-15-6 CAPLUS

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-CN2-cyclopropyl-2,3,6,7,12,12a-hexahydro-, (6R,12aS)-rel- (9CI) (CA INDEX NAME)

RN 171488-16-7 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-butyl-2,3,6,7,12,12a-hexahydro-, (6R,12aS)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 171488-17-8 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4~b]indole-1,4~dione, 6-(1,3-benzodioxol~5-yl)-2-butyl-2,3,6,7,12,12a-hexahydro-, (6R,12aR)-rel- (9CI) (CA INDEX NAME)

10/031463

171488-18-9 CAPLUS

Pyrazino[1',2':1,6] pyrido[3,4-b] indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-1,4-dione, 6-(1,3-benzodioxol-6-yl)-1,4-dioxol-6-(1,3-benzodioxol-6-yl)-1,4-dioxol-6-(1,3-benzodioxol-6-yl)-1,4-dioxol-6-(1,3-benzodioxol-6-yl)-1,4-dioxol-6-(1,3-benzodioxol-6-yl)-1,4-dioxol-6-(1,3-benzodioxol-6-yl)-1,4-dioxol-6-(1,3-benzodioxol-6-yl)-1,4-dioxol-6-(1,3-benzodioxol-6-yl)-1,4-dioxol-6-(1,3-benzodioxol-6-yl)-1,4-dioxol-6-(1,3-benzodioxol-6-yl)-1,4-dioxol-6-(1,3-benzodioxol-6-yl)-1,4-dioxol-6-(1,3-benzodioxol-6-yl)-1,4-dioxol-6-(1,3-benzodioxol-6-yl)-1,4-dioxol-6-(1,3-benzo2-(cyclopropylmethyl)-2,3,6,7,12,12a-hexahydro-, (6R,12aS)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

171488-19-0 CAPLUS RN

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-CN 2-cyclopentyl-2,3,6,7,12,12a-hexahydro-, (6R,12aS)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

171488-20-3 CAPLUS RN

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-CN2-cyclohexyl-2,3,6,7,12,12a-hexahydro-, (6R,12aS)-rel- (9CI) (CA INDEX NAME)

RN 171488-21-4 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-(phenylmethyl)-, (6R,12aS)-rel-(9CI) (CAINDEX NAME)

Relative stereochemistry.

RN 171488-22-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-[(4-fluorophenyl)methyl]-2,3,6,7,12,12a-hexahydro-, (6R,12aS)-rel- (9CI) (CA INDEX NAME)

171488-76-9 CAPLUS RN

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-CN2,3,6,7,12,12a-hexahydro-2-(2-methylpropyl)-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

171488-77-0 CAPLUS RN

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-CN2-(cyclohexylmethyl)-2,3,6,7,12,12a-hexahydro-, (6R,12aR)- (9CI) (CA INDEX NAME)

RN 171488-86-1 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2,10-dimethyl-, (6R,12aS)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 171488-87-2 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-[(3,4-dimethoxyphenyl)methyl]-2,3,6,7,12,12a-hexahydro-, (6R,12aR)-(9CI) (CA INDEX NAME)

RN 171488-91-8 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-(2-propynyl)-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

RN 171488-92-9 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-(1,3-benzodioxol-5-ylmethyl)-2,3,6,7,12,12a-hexahydro-, (6R,12aR)- (9CI) (CA INDEX NAME)

RN 171488-94-1 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-(2-furanylmethyl)-2,3,6,7,12,12a-hexahydro-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

RN 171488-95-2 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-(2-thienylmethyl)-, (6R,12aR)- (9CI) (CA INDEX NAME)

RN

171489-02-4 CAPLUS
Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2,3-dimethyl-, (3R,6R,12aR)- (9CI) (CA INDEX CN

Absolute stereochemistry. Rotation (+).

RN171596-27-3 CAPLUS

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aS)- (9CI) (CA INDEX NAME)

RN 171596-28-4 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6S,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

RN 171596-30-8 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-(1-methylethyl)-, (6R,12aR)- (9CI) (CA INDEX NAME)

RN 171596-31-9 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-butyl-2,3,6,7,12,12a-hexahydro-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

RN 171596-32-0 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-cyclopentyl-2,3,6,7,12,12a-hexahydro-, (6R,12aR)- (9CI) (CA INDEX NAME)

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RN 171596-36-4 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

RN 171596-40-0 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2,3-dimethyl-, (3S,6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

RN 187935-15-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-3-methyl-, (3S,6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 303984-32-9 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-[2-(1,3-benzodioxol-5-yl)ethyl]-2,3,6,7,12,12a-hexahydro-, (6R,12aR)-(9CI) (CA INDEX NAME)

Absolute stereochemistry.

RE.CNT 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

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ANSWER 69 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
L5
     2000:686171 CAPLUS
AN
     133:271672
DN
     Phosphodiesterase inhibitor preparation for treatment of sexual functional
TI
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     Lilly Icos Llc, USA
PA
     Ger. Gebrauchsmusterschrift, 47 pp.
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HR 2001000778	A1	20021231	HR 2001-778	20011023
ио 2001005275	Α	20011206	NO 2001-5275	20011029

PRAI US 1999-132036P P 19990430 WO 2000-US11129 W 20000426

AB A formulation for the treatment of sexual malfunctions (e.g., erectile dysfunction in men and decreased libido in women) which contains a phosphodiesterase 5 inhibitor with a IC50 of at least 100-fold lower than that with phosphodiesterase 6 as active ingredient, and which inhibits phosphodiesterase 5 with an IC50 of at least 1000-fold lower than for phosphodiesterase 1c and a IC50 for PDE5 of below 10 nM.

IT 171596-29-5

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses) (phosphodiesterase inhibitor prepn. for treatment of sexual functional disorders)

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

```
ANSWER 70 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
L5
AN
     2000:666601 CAPLUS
     133:256811
DN
     Pharmaceutical compositions containing dopamine agonists in combination
ΤI
     with nitric oxide donors for treating and/or preventing sexual
     dysfunctions
     Garvey, David S.
IN
     Nitromed, Inc., USA
PA
SO
     PCT Int. Appl., 48 pp.
     CODEN: PIXXD2
DΤ
     Patent
LA English
FAN.CNT 1
                                                  APPLICATION NO. DATE
                         KIND
                                DATE
     PATENT NO.
                                                  _____
                                _____
                                                                      20000310
     WO 2000054773
                          A1
                               20000921
                                                 WO 2000-US3709
PΙ
          W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
          RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
                                19990312
PRAI US 1999-123920P
                          Р
     MARPAT 133:256811
      The present invention is directed to novel compns. comprising at least one
AΒ
      dopamine agonist in combination with at least one nitric oxide donor (i.e.
      compds. that donate, transfer or release nitric oxide, elevate endogenous
      levels of endothelium-derived relaxing factor, stimulate endogenous
      synthesis of nitric oxide or are substrates for nitric oxide synthase).
      The novel compns. may optionally comprise at least one therapeutic agent,
      such as, a vasoactive agent, an antiemetic agent, and mixts. thereof. The
      dopamine agonist is preferably apomorphine. The present invention is also
      directed to methods for treating and/or preventing sexual dysfunctions
      and/or enhancing sexual responses in patients. In other embodiments, the
      present invention is directed to methods treating or preventing
      neurodegenerative diseases, mitochondrial diseases, spinal cord injury,
      central or psychostimulant addiction, senile dementia, circulatory
      disorders, cardiovascular disorders, hyperprolactinemia or myopia.
      compds. and/or compns. of the present invention can also be provided in
      the form of a pharmaceutical kit (no data).
      171596-29-5, Ic 351
IT
      RL: BAC (Biological activity or effector, except adverse); BSU (Biological
      study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES
          (pharmaceutical compns. contg. dopamine agonists in combination with
         nitric oxide donors for treating and/or preventing sexual dysfunctions)
      171596-29-5 CAPLUS
RN
      Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-
CN
      2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)
```

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

```
L5
     ANSWER 71 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
ΑN
     2000:645819 CAPLUS
     133:227820
DN
     Pharmaceutical compositions for treating erectile dysfunction containing a
ΤI
    melanocortin receptor agonist and a cyclic-GMP-specific phosphodiesterase
     inhibitor or an .alpha.-adrenergic receptor antagonist
     Stoner, Elizabeth
ΙN
    Merck & Co., Inc., USA; Waldstreicher, Joanne
PA
SO
     PCT Int. Appl., 25 pp.
     CODEN: PIXXD2
DT
     Patent
LΑ
     English
FAN.CNT 1
     PATENT NO.
                     KIND DATE
                                          APPLICATION NO.
                                                           DATE
                     ____
                           _____
                                          ______
                            20000914
                                          WO 2000-US5711
PΙ
    WO 2000053148
                      A2
                                                            20000303
                           20001214
    WO 2000053148
                      Α3
         W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU,
             CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL,
             IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
             MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK,
             SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ,
             BY, KG, KZ, MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE,
             DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF,
             CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
                                                            20000303
                                          EP 2000-916081
     EP 1161255
                      A2
                          20011212
            AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO
                           19990308
PRAI US 1999-123244P
                     P
    WO 2000-US5711
                      W
                           20000303
    The present invention provides for a method for the treatment of erectile
AΒ
    dysfunction in a male or female human subject in need of such treatment
     comprising administration of a therapeutically effective amt. of an
     agonist of the melanocortin receptor in combination with a therapeutically
     effective amt. of a cyclic-GMP-specific phosphodiesterase inhibitor or an
     alpha-adrenergic receptor antagonist. Further, the present invention
     provides for pharmaceutical compns. useful in the methods of the present
     invention, as well as a method of manuf. of a medicament useful for
     treating erectile dysfunction. Effect of the combination of 20 mg/kg of
     the invention compds. was tested in rats. A hard gelatin capsule
     contained a melanocortin receptor agonist 5, and a type V
    phosphodiesterase inhibitor 10 mg.
TT
     171596-29-5
     RL: BAC (Biological activity or effector, except adverse); BSU (Biological
     study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES
        (pharmaceutical compns. for treating erectile dysfunction contg.
        melanocortin receptor agonist and cyclic-GMP-specific phosphodiesterase
        inhibitor or .alpha.-adrenergic receptor antagonist)
RN
     171596-29-5 CAPLUS
CN
     Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-
```

2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

```
ANSWER 72 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
AN
     2000:475525 CAPLUS
     133:109946
DN
    Methylaminodihydroimidazoquinolinones for treating sexual disturbances and
ΤI
     inducing mating in animals
IN
    Meglasson, Martin Durham; McCall, Robert B.
PΑ
     Pharmacia & Upjohn Company, USA
SO
     PCT Int. Appl., 48 pp.
     CODEN: PIXXD2
DT
    Patent
    English
LA
FAN.CNT 1
     PATENT NO.
                     KIND DATE
                                          APPLICATION NO. DATE
                           -----
                     ____
                                           _____
                   A2
    WO 2000040226
                            20000713
                                          WO 1999-US27951 19991220
PΙ
                            20010201
    WO 2000040226
                     A3
            AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU,
             CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL,
             IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA,
            MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI,
             SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM,
            AZ, BY, KG, KZ, MD, RU, TJ, TM
        RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE,
             DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF,
             CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
                            20020924
                                                            19991217
    US 6455564
                      B1
                                          US 1999-465668
                            20010925
                                           BR 1999-16759
     BR 9916759
                      Α
                                                            19991220
                            20011010
                                          EP 1999-967142
    EP 1140092
                      A2
                                                            19991220
            AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO
                                           JP 2000-591983
     JP 2002534376
                      Т2
                            20021015
                                                            19991220
    NZ 512820
                            20021220
                                           NZ 1999-512820
                                                            19991220
                      Α
    ZA 2001004283
                            20020524
                                           ZA 2001-4283
                                                            20010524
                      Α
                            20020808
                                           US 2002-78611
                                                            20020219
    US 2002107247
                      A1
                            20021226
                                           US 2002-208353
    US 2002198187
                      A1
                                                            20020730
    US 2003004152
                      A1
                            20030102
                                           US 2002-208084
                                                            20020730
                                           US 2002-208644
                                                            20020730
    US 2003013710
                      Α1
                            20030116
PRAI US 1999-114840P
                       Р
                            19990106
    US 1999-115051P
                       Ρ
                            19990108
    US 1999-115922P
                       P
                           19990114
    US 1999-120543P
                       Ρ
                            19990217
    US 1999-465668
                      Α3
                            19991217
                      W
    WO 1999-US27951
                            19991220
    US 2002-78611
                       A3
                            20020219
os
    MARPAT 133:109946
GΙ
```

$$R^{1}$$
 R^{2}
 R^{3}
 R^{3}

The present invention is a method of treating sexual disturbances in humans and inducing mating in non-human mammals using the compds. of formula (I: R1,R2,R3 = H, alkyl, alkenyl, cycloalkyl, etc.; X = H, alkyl, halogen, OH, etc.; A,B,D = CH, CH2, CO, N, etc.; n = 0 or 1) in a dosage range where the sexually therapeutic amt. is from about 0.2 through 8 mg/person/dose and where the sexually mating amt. is from about 0.003 through 0.2 mg/kg/dose.

TT 171596-29-5, ICOS 351
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses) (treating sexual disturbances and inducing mating in animals)

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

```
ANSWER 73 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
L5
ΑN
     2000:392967 CAPLUS
DN
     133:22405
     Preventives containing 1,6-dihydro-7H-pyrazolo[4,3-d]pyrimidin-7-one
TТ
     derivatives and related compounds for nitric acid-induced tolerance
     Ellis, Peter
IN
     Pfizer Inc., USA
PA
     Jpn. Kokai Tokkyo Koho, 31 pp.
SO
     CODEN: JKXXAF
DT
     Patent
LА
     Japanese
FAN.CNT 1
                                            APPLICATION NO.
                                                             DATE
                      KIND
                            DATE
     PATENT NO.
                                            _____
                                            JP 1999-337606
                                                             19991129
                            20000613
PΤ
     JP 2000159672
                       A2
                            20010501
                                            US 1999-442821
                                                             19991118
     US 6225315
                       В1
                                            EP 1999-309406
                                                             19991125
     EP 1022026
                       A2
                            20000726
                            20020410
     EP 1022026
                       А3
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             IE, SI, LT, LV, FI, RO
                                            CA 1999-2290766
                                                             19991126
                            20030204
     CA 2290766
                       С
                       Α
                             20010529
                                            ZA 1999-7371
                                                             19991129
     ZA 9907371
     NZ 515501
                       Α
                             20030829
                                            NZ 1999-515501
                                                             19991129
                                            AU 1999-61788
                                                             19991130
     AU 9961788
                       A1
                             20000601
                       B2
                             20031113
     AU 767452
                                            KR 1999-53785
                                                             19991130
                             20000626
     KR 2000035774
                       Α
                             19981130
PRAI US 1998-110335P
                       Ρ
os
     MARPAT 133:22405
GΙ
```

$$\begin{array}{c|cccc}
OR^3 & HN & & & \\
N & & & & \\
R^2 & & & & \\
R^5 & & & I
\end{array}$$

The title compds. [I; R1 = H, C1-3 alkyl, C3-5 cycloalkyl, C1-3 perfluoroalkyl; R2 = H, C1-3 perfluoroalkyl, C1-6 alkyl substituted by OH, C1-3 alkoxy, or C3-6 cycloalkyl; R3 = C1-6 alkyl, C3-6 alkenyl, C3-6 alkynyl, C3-7 cycloalkyl, C1-6 perfluoroalkyl, C3-6 cycloalkyl-C1-6 alkyl; R4 together with the R4-bonded N completes 4-N-R6-piperazinyl; R5 = H, C1-4 alkyl, C1-3 alkoxy, NR7R8, CONR7R8; wherein R6 = H, C1-6 alkyl, hydroxy-C2-6 alkyl, R7R8N-C2-6 alkyl, R7R8NCO-C1-6 alkyl, CONR7R8, CSNR7R8, C(:NH)NR7R8; wherein R7, R8 = H, C1-4 alkyl, C1-3 alkoxy-C2-4 alkyl, hydroxy-C2-4 alkyl], pharmacol. acceptable salts, prodrugs, polymorphs, hydrates, solvates, active metabolites, or stereoisomers

thereof, which are cGMP phosphodiesterase inhibitors and useful for the prevention of nitrate tolerance (no data), are prepd. The title compds. also include pyrazolo[3,4-d]pyrimidin-4-one, quinazolin-4-one, purin-6-one, pyrido[3,2-d]pyrimidin-4-one, and pyrazino[1',2':1,6]pyrido[3,4-b]indole derivs.

171488-10-1P 171488-15-6P 171596-29-5P 171596-30-8P 171596-32-0P 171596-36-4P 171596-40-0P 187935-15-5P

RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preventives contg. 1,6-dihydro-7H-pyrazolo[4,3-d]pyrimidin-7-one derivs. and related compds. as cGMP phosphodiesterase inhibitors for nitric acid-induced tolerance)

RN 171488-10-1 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-(4-pyridinylmethyl)-, (6R,12aS)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 171488-15-6 CAPLUS
CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)2-cyclopropyl-2,3,6,7,12,12a-hexahydro-, (6R,12aS)-rel- (9CI) (CA INDEX

Relative stereochemistry.

NAME)

RN 171596-29-5 CAPLUS

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-CN2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

171596-30-8 CAPLUS RN

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-CN2,3,6,7,12,12a-hexahydro-2-(1-methylethyl)-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

171596-32-0 CAPLUS RN

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-СИ 2-cyclopentyl-2,3,6,7,12,12a-hexahydro-, (6R,12aR)- (9CI) (CA INDEX NAME)

171596-36-4 CAPLUS RN

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-, (6R,12aR)- (9CI) (CA INDEX NAME) CN

Absolute stereochemistry. Rotation (+).

171596-40-0 CAPLUS RN

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2,3-dimethyl-, (3S,6R,12aR)- (9CI) (CA INDEX CNNAME)

RN 187935-15-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-3-methyl-, (3S,6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

```
ANSWER 74 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
L5
     2000:240994 CAPLUS
ΑN
     132:270098
DN
     Tablets immediately disintegrating in the oral cavity
ΤI
     Furitsu, Hisao; Kato, Akira; Ohwaki, Takayuki; Yasui, Masanori
IN
     Eisai Co., Ltd., Japan
PΆ
     PCT Int. Appl., 39 pp.
SO
     CODEN: PIXXD2
DT
     Patent
     Japanese
LA
FAN.CNT 1
                     KIND DATE
                                           APPLICATION NO.
                                                            DATE
     PATENT NO.
                                           _____
                      ____
                                                            19990928
                                           WO 1999-JP5298
                            20000413
     WO 2000020033
                      A1
PΙ
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         RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,
             PT, SE
                                           CA 1999-2346350 19990928
                            20000413
     CA 2346350
                      AΑ
                                           EP 1999-944874
                                                            19990928
                            20010801
     EP 1120120
                      A1
         R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, FI
                            20000627
                                           JP 1999-276133
                                                            19990929
                      A2
     JP 2000178204
                            20000711
                                           JP 1999-276134
                                                            19990929
                      A2
     JP 2000191518
PRAI JP 1998-282378
                            19981005
                       Α
                            19981019
     JP 1998-295947
                       Α
                       W
                            19990928
     WO 1999-JP5298
     MARPAT 132:270098
OS
     The invention relates to tablets immediately disintegrating in the oral
AΒ
     cavity which contain a phosphodiesterase inhibitor having an effect of
     ameliorating erectile dysfunction and a process for producing the same;
     and tablets immediately disintegrating in the oral cavity which contain a
     hardly sol. drug and show an improved soly.; and a process for producing
     the same. Namely, tablets immediately disintegrating in the oral cavity
     which contain a cyclic GMP phosphodiesterase inhibitor [e.g. sildenafil]
     and saccharides and process for producing the same; and a process for
     producing tablets immediately disintegrating in the oral cavity which
     comprises dissolving the hardly sol. drug together with a surfactant
     and/or a water-sol. polymer in an org. solvent or an aq. org. solvent,
     mixing saccharides with a molded matter obtained by coating a filler or
     granulating together with a filler, adding an org. solvent, water or an
     aq. org. solvent thereto, kneading the resultant mixt. and then
     compression molding the same.
     263392-02-5 263392-03-6
IT
     RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
        (tablets immediately disintegrating in the oral cavity)
RN
     263392-02-5 CAPLUS
     Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-
     2,3,6,7,12,12a-hexahydro-2-methyl-, (6S)- (9CI) (CA INDEX NAME)
```

Absolute stereochemistry.

263392-03-6 CAPLUS RN

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2,3-dimethyl-, (3S,6S)- (9CI) (CA INDEX NAME) CN

Absolute stereochemistry.

THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD RE.CNT 28 ALL CITATIONS AVAILABLE IN THE RE FORMAT

```
ANSWER 75 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
     1999:753072 CAPLUS
AN
     131:346565
DN
     Combination of phentolamine and cyclic GMP phosphodiesterase inhibitors
TI
     for the treatment of sexual dysfunction
     Estok, Thomas Mark
IN
     Schering Corporation, USA
PA
     PCT Int. Appl., 104 pp.
SO
     CODEN: PIXXD2
\mathbf{DT}
     Patent
     English
LA
FAN.CNT 1
                                                 APPLICATION NO. DATE
                         KIND DATE
     PATENT NO.
                                                 _____
                                                                     19990517
                                                 WO 1999-US7046
     WO 9959584
                                19991125
                          A1
PΙ
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              DK, EE, ES, FI, GB, GD, GE, HR, HU, ID, IL, IN, IS, JP, KG, KR, KZ, LC, LK, LR, LT, LU, LV, MD, MG, MK, MN, MX, NO, NZ, PL, PT, RO, RU, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, US, UZ, VN, YU, ZA, AM, AZ, BY, KG, KZ, RU, TJ, TM
          RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG,
               CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
                                                 AU 1999-40685
                                                                     19990517
                          A1
                                19991206
     AU 9940685
                                19980520
PRAI US 1998-81640
                          Α
                          A2
                                19980521
      US 1998-82977
                                19980629
      US 1998-106517
                          Α
                                19990517
      WO 1999-US7046
                          W
      A method of treating sexual dysfunction comprising administering a
AΒ
      therapeutically effective amt. of a combination of phentolamine and cGMP
      PDE inhibitor (e.g. sildenafil), as well as pharmaceutical compns. and
      kits useful in those methods, are disclosed.
      171596-29-5 171596-40-0
IT
      RL: BAC (Biological activity or effector, except adverse); BSU (Biological
      study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES
      (Uses)
          (phentolamine and cyclic GMP phosphodiesterase inhibitors for the
         treatment of sexual dysfunction)
      171596-29-5 CAPLUS
RN
      Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-
CN
      2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)
```

RN 171596-40-0 CAPLUS

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2,3-dimethyl-, (3S,6R,12aR)- (9CI) (CA INDEX CNNAME)

Absolute stereochemistry. Rotation (+).

THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD RE.CNT 9 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 76 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN

AN 1999:393867 CAPLUS

DN 131:193591

TI IC-351 ICOS Corp

AU Norman, Peter

CS Norman Consulting, Bucks, SL1 8JW, UK

Current Opinion in Central & Peripheral Nervous System Investigational Drugs (1999), 1(2), 268-271 CODEN: COCDFA; ISSN: 1464-844X

PB Current Drugs Ltd.

DT Journal; General Review

LA English

A review with 35 refs. IC-351 (GF-196960), an inhibitor of AB phosphodiesterase 5 (PDE5) from ICOS Corp, is in phase II trials for the treatment of mild to moderate erectile dysfunction (ED) [274568], [296831]. A randomized, placebo-controlled, crossover study assessed the safety and physiol. effects of IC-351 in patients with ED [274568]. Enrollment was completed in Apr. 1998 [284935]. Results from the trial showed that IC-351 demonstrated significant benefit over placebo [311566]. In Oct. 1998, ICOS entered into a joint venture agreement with Eli Lilly for the development and commercialization of IC-351 for the treatment of sexual dysfunction [300118], [310951]. IC-351 is also in development for the treatment of female sexual dysfunction [321995]. In Mar. 1998, the company announced that the compd. was in preclin. evaluation for the treatment of hypertension [284638]. A collaboration with Glaxo Wellcome (GW) was terminated in Mar. 1997 [240438] and intellectual property rights were assigned to ICOS. This left ICOS to develop the compds. with royalties payable to GW. Although GW reserved the right to pursue its own program, it does not appear to be doing so. In Feb. 1999 Deutsche Bank predicted sales of \$200 million in 2002 rising to \$400 million in 2003 for IC-351 [316821].

IT **171596-29-5**

RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)

(effect of IC-351 for treatment of mild to moderate erectile dysfunction)

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

RE.CNT 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

```
ANSWER 77 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
         1997:215760 CAPLUS
AN
         126:203727
DN
         Use of cGMP-phosphodiesterase inhibitors to treat impotence
ΤI
         Daugan, Alain Claude-Marie
IN
         Laboratoire Glaxo Wellcome S.A., Fr.; Daugan, Alain Claude-Marie
PA
         PCT Int. Appl., 27 pp.
SO
         CODEN: PIXXD2
         Patent
DT
         English
LΑ
FAN.CNT 4
                                                                                  APPLICATION NO.
                                                                                                                   DATE
                                          KIND
                                                     DATE
         PATENT NO.
                                                                                  ______
                                                                                                                   19960711
                                                     19970206
                                                                                  WO 1996-EP3024
PΙ
         WO 9703675
                                           A1
                 W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE,
                         ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD,
                         SE, SG
                 RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR,
                         IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA
                                                                                  CA 1996-2226784 19960711
                                                      19970206
          CA 2226784
                                            AA
                                                      20030708
                                            С
          CA 2226784
                                                                                   AU 1996-64191
                                                                                                                    19960711
                                                      19970218
                                            A1.
          AU 9664191
                                                      19990513
                                            B2
          AU 704955
                                                                                   EP 1996-923985
                                                                                                                    19960711
                                            Α1
                                                      19980506
          EP 839040
                 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
                         IE, SI, LT, LV, FI
                                                                                                                    19960711
                                                                                   CN 1996-196723
                                                      19981007
                                            Α
          CN 1195290
                                            В
                                                      20030702
          CN 1112928
                                                                                   BR 1996-9758
                                                                                                                    19960711
                                                      19990126
          BR 9609758
                                            Α
                                                                                                                    19960711
                                                                                   JP 1996-506248
          JP 11509221
                                            T2
                                                      19990817
                                                                                                                    19960711
                                                                                   IL 1996-122870
                                            A1
                                                      20020310
          IL 122870
                                                                                                                    19960711
                                                                                   CZ 1998-33
                                            В6
                                                      20020313
          CZ 289686
                                                                                                                    19960711
                                                                                   RU 1998-102398
                                            C2
                                                      20020420
          RU 2181288
                                                                                                                    19980113
                                                                                   NO 1998-153
                                                      19980310
          NO 9800153
                                            Α
                                                                                   US 1998-981989
                                                                                                                    19980310
                                                      20001031
                                            Α
          US 6140329
                                                                                                                    19980916
                                                      20001107
                                                                                   US 1998-154051
                                            Α
          US 6143746
                                                                                   US 2000-573905
                                                                                                                    20000518
                                                      20030819
                                            В1
          US 6608065
                                                                                                                    20000919
                                                                                   CZ 2000-3428
                                            В6
                                                      20020417
          CZ 289832
                                                       19950714
PRAI GB 1995-14464
                                            Α
                                                       19940121
          GB 1994-1090
                                            Α
                                                       19950119
          WO 1995-EP183
                                            A2
                                                       19950714
          GB 1995-14465
                                            Α
          CZ 1998-33
                                             Α3
                                                       19960711
                                            W
                                                       19960711
          WO 1996-EP3024
          WO 1996-EP3025
                                             A2
                                                       19960711
          US 1998-981989
                                             A1
                                                       19980310
          MARPAT 126:203727
 OS
           Compds. such as (6R, 12aR) - 2, 3, 6, 7, 12, 12a - hexahydro - 2 - methyl - 6 - (3, 4 - 12a - 
 AB
           methylenedioxyphenyl)pyrazino[2',1':6,1]pyrido[3,4-b]indole-1,4-dione,
           (3S, 6R, 12aR) -2, 3, 6, 7, 12, 12a-hexahydro-2, 3-dimethyl-6-(3, 4-
           methylenedioxyphenyl)pyrazino[2',1':6,1]pyrido[3,4-b]indole-1,4-dione, and
           physiol. acceptable salts and solvates thereof, can be used as
           cGMP-phosphodiesterase inhibitors in the treatment of impotence.
           171596-29-5P 171596-40-0P
           RL: BAC (Biological activity or effector, except adverse); BSU (Biological
           study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use);
           BIOL (Biological study); PREP (Preparation); USES (Uses)
```

(cGMP-phosphodiesterase inhibitor formulations to treat impotence)

171596-29-5 CAPLUS RN

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-CN 2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

171596-40-0 CAPLUS RN

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-CN 2,3,6,7,12,12a-hexahydro-2,3-dimethyl-, (3S,6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

IT 187935-15-5P

RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(cGMP-phosphodiesterase inhibitor formulations to treat impotence)

187935-15-5 CAPLUS RN

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-CN 2,3,6,7,12,12a-hexahydro-3-methyl-, (3S,6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

```
ANSWER 78 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
L5
     1997:101617 CAPLUS
AN
DN
     126:108935
     Method of producing a solid dispersion of a poorly water-soluble drug
TI
     Butler, James Matthew
IN
     Glaxo Group Limited, UK; Butler, James Matthew
PA
     PCT Int. Appl., 27 pp.
SO
     CODEN: PIXXD2
     Patent
DT
     English
LΑ
FAN.CNT 1
                     KIND DATE
                                          APPLICATION NO. DATE
     PATENT NO.
                                           _____
                                                           ______
                            19961205
                                                            19960530
                                          WO 1996-EP2299
PI
     WO 9638131
                      A1
        W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE,
            ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT,
             LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE,
             SG, SI
         RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR,
             IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN
                                         AU 1996-60026
                                                          19960530
                            19961218
     AU 9660026
                       A1
                                          EP 1996-917457
                                                            19960530
                            19980318
                       Α1
     EP 828479
                            20011024
                       В1
     EP 828479
           AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, FI
                                           AT 1996-917457
                                                            19960530
     AT 207344
                            20011115
                                           ES 1996-917457
                                                            19960530
     ES 2167566
                       Т3
                            20020516
                                           US 1998-952938
                                                            19980206
                            19991116
     US 5985326
                       Α
PRAI GB 1995-11220
                       Α
                            19950602
                            19960530
     WO 1996-EP2299
                       W
     A process for prepg. solid dispersions of poorly sol. drugs comprises (1)
AΒ
     providing an intimate mixt. contg. the carrier or excipient and a nonaq.
     water-miscible solvent, and optionally, water, (2) mixing the intimate
     mixt. with the poorly water-sol. drug, and (3) pptg. the drug and the
     carrier or excipient. Specifically, solid dispersions of
     (6R, 12aR) -2, 3, 6, 7, 12, 12a-hexahydro-2-methyl-6-(3, 4-
     methylenedioxyphenyl)pyrazino[2',1':6,1]pyrido[3,4-b]indole-1,4-dione (I)
     and (+)-N-[1-(adamantanmethyl)-2,4-dioxo-5-phenyl-2,3,4,5-tetrahydro-1H-
     1,5-benzodiazepin-3-yl]-N'-phenylurea are described. I 1 g and
     hydroxypropyl Me cellulose phthalate 1 g were dissolved in a 9:1 mixt. of
     acetone/water (27 mL) and 0.25 M HCl 83 mL was added to obtain a ppt. The
     ppt. was filtered, washed with water, dried, and milled. A tablet contg.
     100 mg ppt. was formulated.
     171596-29-5P
IT
     RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use);
     BIOL (Biological study); PREP (Preparation); USES (Uses)
        (prepn. of pyrazinopyridoindole deriv. in manuf. of solid dispersion of
        poorly water-sol. drugs)
RN
     171596-29-5 CAPLUS
     Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-
CN
     2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)
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ANSWER 79 OF 79 CAPLUS COPYRIGHT 2003 ACS on STN
     1995:986316 CAPLUS
ΑN
     124:55977
DN
     Preparation of pyrazinopyridoindolediones as inhibitors of cyclic
ΤI
     quanosine 3',5'-monophosphate specific phosphodiesterase
     Daugan, Alain Claude-Marie
IN
     Laboratoires Glaxo S.A., Fr.
PA
     PCT Int. Appl., 87 pp.
SO
     CODEN: PIXXD2
DT
     Patent
     English
ĽА
FAN.CNT 4
                                           APPLICATION NO.
                                                             DATE
     PATENT NO.
                      KIND
                            DATE
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                            19950727
                                           WO 1995-EP183
                                                             19950119
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     WO 9519978
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             MN, MW, MX, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SI, SK, TJ, TT,
             UA, US
         RW: KE, MW, SD, SZ, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU,
             MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN,
             TD, TG
                                           HR 1995-950023
                                                             19950117
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                       В
                            20000101
     TW 378210
                                           CA 1995-2181377 19950119
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     CA 2181377
     CA 2181377
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                            19970226
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     CN 1045777
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                                           HU 1996-1982
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                            19970328
     HU 74943
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                       T2
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                            20000517
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     PL 179744
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                             20001031
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                                            RO 1996-1454
     RO 117794
                                            IN 1995-DE77
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     IN 183942
                       Α
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     LV 11690
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     FI 9602927
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     NO 9603015
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                       Α
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     CN 1070492
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                                                             19981222
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                                                             19990921
                       Α
                             20001003
     US 6127542
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20000807
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PRAI GB 1994-1090
                       Α
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    WO 1995-EP183
                       W
                           19950119
    GB 1995-14464
                       Α
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    GB 1995-14465
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                           19950714
    WO 1996-EP3024
                       A2
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    WO 1996-EP3025
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    US 1998-133078
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                            19980812
    US 1999-399667
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                            19990921
    US 2000-633431
                       A1
                            20000807
    MARPAT 124:55977
OS
    For diagram(s), see printed CA Issue.
GI
    The title compds. I [R represents hydrogen, halogen or C1-6 alkyl; R1
     represents hydrogen, C1-6 alkyl, C2-6 alkenyl, C2-6 alkynyl,
    haloC1-6alkyl, C3-8cycloalkyl, etc.; R2 represents an optionally
     substituted monocyclic arom. ring selected from benzene, thiophene, furan
     and pyridine or an optionally substituted bicyclic ring Q1 attached to the
     rest of the mol. via one of the benzene ring carbon atoms and wherein the
     fused ring A is a 5- or 6-membered ring which may be satd. or partially or
     fully unsatd. and comprises carbon atoms and optionally one or two
    heteroatoms selected from oxygen, sulfur and nitrogen; and R3 represents
    hydrogen or C1-3 alkyl, or R1 and R3 together represent a 3- or 4-membered
     alkyl or alkenyl chain] are prepd. In an in vitro test for inhibitory
     effect on cGMP-PDE, cis-2,3,6,7,12,12a-hexahydro-2-(4-pyridylmethyl)-6-
     (3,4-methylenedioxyphenyl)pyrazino[2',1':6,1]pyrido[3,4-b]indole-1,4-dione
     (prepn. given) showed IC50 of 10 nM.
     171488-01-0P 171488-03-2P 171488-04-3P
     171488-06-5P 171488-07-6P 171488-08-7P
     171488-09-8P 171488-10-1P 171488-11-2P
     171488-12-3P 171488-13-4P 171488-14-5P
     171488-15-6P 171488-16-7P 171488-17-8P
     171488-18-9P 171488-19-0P 171488-20-3P
     171488-21-4P 171488-22-5P 171488-76-9P
     171488-77-0P 171488-86-1P 171488-87-2P
     171488-91-8P 171488-92-9P 171488-93-0P
     171488-94-1P 171488-95-2P 171489-02-4P
     171596-27-3P 171596-28-4P 171596-29-5P
     171596-30-8P 171596-31-9P 171596-32-0P
     171596-36-4P 171596-40-0P
     RL: BAC (Biological activity or effector, except adverse); BSU (Biological
     study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use);
     BIOL (Biological study); PREP (Preparation); USES (Uses)
        (prepn. of pyrazinopyridoindolediones as inhibitors of cyclic guanosine
        monophosphate specific phosphodiesterase)
     171488-01-0 CAPLUS
RN
     Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-
CN
```

2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aS)-rel- (9CI) (CA INDEX NAME)

RN 171488-03-2 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 171488-04-3 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-, (6R,12aS)-rel- (9CI) (CA INDEX NAME)

RN 171488-06-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-10-fluoro-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aS)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 171488-07-6 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-[2-(2-pyridinyl)ethyl]-, (6R,12aS)-rel-(9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 171488-08-7 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-(2-pyridinylmethyl)-, (6R,12aS)-rel- (9CI) (CA INDEX NAME)

RN 171488-09-8 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-(3-pyridinylmethyl)-, (6R,12aS)-rel-(9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 171488-10-1 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-(4-pyridinylmethyl)-, (6R,12aS)-rel-(9CI) (CA INDEX NAME)

171488-11-2 CAPLUS RN

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-ethyl-2,3,6,7,12,12a-hexahydro-, (6R,12aS)-rel- (9CI) (CA INDEX NAME) CN

Relative stereochemistry.

171488-12-3 CAPLUS RN

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-(2,2,2-trifluoroethyl)-, (6R,12aS)-rel- (9CI) CN(CA INDEX NAME)

RN 171488-13-4 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-propyl-, (6R,12aS)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 171488-14-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-(1-methylethyl)-, (6R,12aS)-rel-(9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 171488-15-6 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-cyclopropyl-2,3,6,7,12,12a-hexahydro-, (6R,12aS)-rel- (9CI) (CA INDEX NAME)

RN 171488-16-7 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-butyl-2,3,6,7,12,12a-hexahydro-, (6R,12aS)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 171488-17-8 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-butyl-2,3,6,7,12,12a-hexahydro-, (6R,12aR)-rel- (9CI) (CA INDEX NAME)

10/031463

RN 171488-18-9 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-(cyclopropylmethyl)-2,3,6,7,12,12a-hexahydro-, (6R,12aS)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 171488-19-0 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-cyclopentyl-2,3,6,7,12,12a-hexahydro-, (6R,12aS)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 171488-20-3 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-cyclohexyl-2,3,6,7,12,12a-hexahydro-, (6R,12aS)-rel- (9CI) (CA INDEX NAME)

RN

171488-21-4 CAPLUS
Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-CN2,3,6,7,12,12a-hexahydro-2-(phenylmethyl)-, (6R,12aS)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RN171488-22-5 CAPLUS

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-[(4-fluorophenyl)methyl]-2,3,6,7,12,12a-hexahydro-, (6R,12aS)-rel- (9CI) CN (CA INDEX NAME)

RN 171488-76-9 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-(2-methylpropyl)-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

RN 171488-77-0 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-(cyclohexylmethyl)-2,3,6,7,12,12a-hexahydro-, (6R,12aR)- (9CI) (CA INDEX NAME)

RN

171488-86-1 CAPLUS
Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-CN2,3,6,7,12,12a-hexahydro-2,10-dimethyl-, (6R,12aS)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

171488-87-2 CAPLUS RN

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-CN2-[(3,4-dimethoxyphenyl)methyl]-2,3,6,7,12,12a-hexahydro-, (6R,12aR)-(9CI) (CA INDEX NAME)

RN

171488-91-8 CAPLUS
Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-CN 2,3,6,7,12,12a-hexahydro-2-(2-propynyl)-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

RN171488-92-9 CAPLUS

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-CN 2-(1,3-benzodioxol-5-ylmethyl)-2,3,6,7,12,12a-hexahydro-, (6R,12aR)- (9CI) (CA INDEX NAME)

171488-93-0 CAPLUS RN

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-[2-(3,4-dimethoxyphenyl)ethyl]-2,3,6,7,12,12a-hexahydro-, (6R-trans)-CN(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

171488-94-1 CAPLUS RN

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-CN2-(2-furanylmethyl)-2,3,6,7,12,12a-hexahydro-, (6R,12aR)- (9CI) (CA INDEX NAME)

RN 171488-95-2 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-(2-thienylmethyl)-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

RN 171489-02-4 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2,3-dimethyl-, (3R,6R,12aR)- (9CI) (CA INDEX NAME)

RN 171596-27-3 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

RN 171596-28-4 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6S,12aR)- (9CI) (CA INDEX NAME)

10/031463

RN 171596-29-5 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

RN 171596-30-8 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-(1-methylethyl)-, (6R,12aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

RN 171596-31-9 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-butyl-2,3,6,7,12,12a-hexahydro-, (6R,12aR)- (9CI) (CA INDEX NAME)

171596-32-0 CAPLUS RN

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2-cyclopentyl-2,3,6,7,12,12a-hexahydro-, (6R,12aR)- (9CI) (CA INDEX NAME) CN

Absolute stereochemistry. Rotation (+).

171596-36-4 CAPLUS RN

Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-CN2,3,6,7,12,12a-hexahydro-, (6R,12aR)- (9CI) (CA INDEX NAME)

RN 171596-40-0 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2,3-dimethyl-, (3S,6R,12aR)- (9CI) (CA INDEX NAME)

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     Tetracyclic cGMP-specific phosphodiesterase inhibitors and their use in
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     Daugan, Alain Claude Marie; Gellibert, Francoise
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     Icos Corp., USA
PA
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     WO 1995-EP183
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     GB 1995-14465
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     WO 1996-EP3024
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                              19960711
     WO 1996-EP3025
                         A2
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     US 1998-133078
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WO 1999-US19466 W 19990826 US 1999-399667 A1 19990921 US 2000-633431 A1 20000807 OS MARPAT 133:329627

GΙ

$$R^0$$
 N
 R^1
 R^2
 R^3

A compd. of formula I (R0 = H, halogen, C1-6 alkyl; R1 = H, C1-6 alkyl, AΒ C2-6 alkenyl, C2-6 alkynyl, halo-C1-6 alkyl, C3-8 cycloalkyl, C3-8 cycloalkyl-C1-3 alkyl, aryl-C1-3 alkyl, heteroaryl-C1-3 alkyl; R2 = (substituted) monocyclic arom. ring selected from benzene, thiophene, furan, and pyridine, or (substituted) bicyclic ring (a) attached to the rest of the mol. via one of the benzene ring carbon atoms, and wherein the fused ring is a 5- or 6-membered ring which may be satd. or partially or fully unsatd., and comprises carbon atoms and optionally one or two heteroatoms selected from oxygen, sulfur, and nitrogen; R3 = H, C1-3 alkyl, or R1 and R3 together = 3- or 4-membered alkyl or alkenyl chain) and salts and solvates thereof is disclosed. Compd. I is a potent and selective inhibitor of cyclic guanosine 3',5'-monophosphate-specific phosphodiesterase, having a utility in a variety of therapeutic areas where such inhibition is beneficial, including the treatment of cardiovascular disorders and erectile dysfunction. Thus, many I compds. were synthesized and tested in vitro as inhibitors of cGMP phosphodiesterase. Cis-2,3,6,7,12,12a-hexahydro-2-(4-pyridylmethyl)-6-(3,4-methylenedioxyphenyl)pyrazino[2',1':6,1]pyrido[3,4-b]indole-1,4-dione showed IC50 of 10 nM.

Ι

TT 171488-01-0P 171488-03-2P 171488-04-3P 171488-06-5P 171488-07-6P 171488-08-7P 171488-09-8P 171488-10-1P 171488-11-2P 171488-12-3P 171488-13-4P 171488-14-5P 171488-15-6P 171488-16-7P 171488-17-8P 171488-18-9P 171488-19-0P 171488-20-3P 171488-21-4P 171488-22-5P 171488-76-9P 171488-91-8P 171488-92-9P 171488-91-8P 171488-92-9P 171488-94-1P 171488-95-2P 171498-02-4P 171596-27-3P 171596-31-9P 171596-32-0P 171596-36-4P 171596-40-0P 187935-15-5P 303984-32-9P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(tetracyclic cyclic GMP-specific phosphodiesterase inhibitors and their use in disease treatment)

171488-01-0 CAPLUS

RN

10/031463

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aS)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

RN 171488-03-2 CAPLUS

CN Pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R,12aR)-rel- (9CI) (CA INDEX NAME)